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YOU HAVE REQUESTED DATA FROM 121 ANSWERS - CONTINUE? Y/(N):y

L7 ANSWER 1 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2006:26550 HCAPLUS  
DN 145:119578  
TI Interstitial pH, pO<sub>2</sub>, and pCO<sub>2</sub> controlled by optical sensors  
AU Baldini, Francesco; Bizzarri, Alessandro; Cajlakovic, Merima; Giannetti, Ambra; Konrad, Christian; Mencaglia, Andrea  
CS Nello Carrara Institute for Applied Physics, Florence, 50127, Italy  
SO Proceedings of SPIE-The International Society for Optical Engineering (2005), 5993(Advanced Environmental, Chemical, and Biological Sensing Technologies III), 599309/1-599309/9  
CODEN: PSISDG; ISSN: 0277-786X  
PB SPIE-The International Society for Optical Engineering  
DT Journal  
LA English  
AB The continuous monitoring of interstitial pH, pO<sub>2</sub> and pCO<sub>2</sub> contained in the adipose tissue of intensive care patients, is one of the objective of the four year European project CLINICIP (Closed Loop Insulin Infusion in Critically Ill Patients). A glass capillary on line with the microfluidic system, is the solid support onto which the appropriate chemical is immobilized. The optical working principle applied for the detection of oxygen and carbon dioxide is the modulation of the fluorescence lifetime, whereas absorption modulation is the approach followed for the pH detection. On this basis, two different optoelectronic units were developed for the interrogation of the glass capillary, one for life-time measurements and the other for absorption measurements. Preliminary tests demonstrated a resolution of 0.03 pH units for pH; ≤ 0.55 mmHg for oxygen and ≤ 0.6 mmHg for carbon dioxide; and an accuracy of 0.07 pH units for pH; ≤ 1 mmHg for oxygen and ≤ 1.5 mmHg for carbon dioxide.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Proceedings of SPIE-The International Society for Optical Engineering (2005), 5993(Advanced Environmental, Chemical, and Biological Sensing Technologies III), 599309/1-599309/9  
CODEN: PSISDG; ISSN: 0277-786X

IT Adipose tissue  
Capillary tubes  
Electroluminescent devices  
Electronic device fabrication  
Fiber optics  
Fluorescence  
Fluorescent substances  
Human  
Mathematical methods  
Optical filters  
Optical sensors  
Photodiodes  
pH  
(continuous monitoring of interstitial pH, pO<sub>2</sub>, and pCO<sub>2</sub> by optical sensors)

IT 50-00-0, Formaldehyde, analysis 64-17-5, Ethanol, analysis 67-64-1, Acetone, analysis 108-88-3, Toluene, analysis 126-73-8, Tributyl phosphate, analysis 143-74-8, Phenol red 4432-31-9, 2-(N-Morpholino)ethanesulfonic acid 7664-39-3, Hydrofluoric acid, analysis 7732-18-5, Water, analysis 9003-53-6, Polystyrene 9004-57-3, Ethyl cellulose 12125-01-8, Ammonium fluoride 13822-56-5, 3-Aminopropyl-trimethoxysilane 17756-58-0, Tetraoctylammonium hydroxide 25322-68-3, Poly(ethylene)glycol 27928-00-3 33434-24-1, Eudragit RL100 37626-13-4, Teflon AF 1601 63373-04-6,

Ruthenium(II)-tris(4,7-diphenyl-1,10-phenanthroline) 109781-47-7  
 RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (continuous monitoring of interstitial pH, pO2, and pCO2 by optical sensors)

L7 ANSWER 2 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:1313958 HCAPLUS

DN 144:43025

TI Package structure of organic electroluminescent device and package method thereof

IN Huang, Ping-Tsung; Hsiao, Hsia-Tsai; Han, Yu-Kai; Cheng, Tung-Sheng; Lin, Yen-Hua

PA Taiwan

SO U.S. Pat. Appl. Publ., 10 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|------------------|------|----------|------------------|--------------|
| PI   | US 2005276947    | A1   | 20051215 | US 2004-869004   | 20040615 <-- |
|      | CN 1705414       | A    | 20051207 | CN 2004-10046427 | 20040531 <-- |
|      | US 2007137781    | A1   | 20070621 | US 2007-621484   | 20070109     |
| PRAI | CN 2004-10046427 | A    | 20040531 |                  |              |
|      | US 2004-869004   | A3   | 20040615 |                  |              |

AB A package structure of an organic electroluminescent (OEL) device is described comprising a substrate; an organic electroluminescent (OEL) component, disposed over the substrate; a cover plate, disposed over the substrate; a desiccant, disposed above the substrate or the cover plate, and the desiccant comprises a hydrophilic polymer; and an adhesive, disposed between the substrate and the cover plate, wherein the OEL component and the desiccant are sealed by the substrate, the cover plate and the adhesive. A method of packaging an organic electroluminescent (OEL) device is also described entailing providing a substrate, comprising an OEL component formed thereon; providing a cover plate; forming a hydrophilic polymer serving as a desiccant between the substrate and the cover plate; and forming an adhesive between the substrate and the cover plate for sealing the OEL component and the desiccant.

TI Package structure of organic electroluminescent device and package method thereof

PI US 2005276947 A1 20051215

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO.  | DATE         |
|----|---------------|------|----------|------------------|--------------|
| PI | US 2005276947 | A1   | 20051215 | US 2004-869004   | 20040615 <-- |
|    | CN 1705414    | A    | 20051207 | CN 2004-10046427 | 20040531 <-- |
|    | US 2007137781 | A1   | 20070621 | US 2007-621484   | 20070109     |

AB A package structure of an organic electroluminescent (OEL) device is described comprising a substrate; an organic electroluminescent (OEL) component, disposed over the substrate; a cover plate, disposed over the substrate; a desiccant, disposed above the substrate or the cover plate, and the desiccant comprises a hydrophilic polymer; and an adhesive, disposed between the substrate and the cover plate, wherein the OEL component and the desiccant are sealed by the substrate, the cover plate and the adhesive. A method of packaging an organic electroluminescent (OEL) device is also described entailing providing a substrate, comprising an OEL component formed thereon; providing a cover plate; forming a hydrophilic polymer serving as a desiccant between the substrate and the cover plate; and forming an adhesive between the substrate and the cover plate for sealing the OEL component and the desiccant.

IT Electroluminescent devices  
(displays; package structure of organic LED using hydrophilic polymer desiccant)

IT Luminescent screens  
(electroluminescent; package structure of organic LED using hydrophilic polymer desiccant)

IT Electroluminescent devices  
Electronic packages  
Electronic packaging process  
(package structure of organic LED using hydrophilic polymer desiccant)

IT 9000-11-7 9002-89-5, Poly(vinyl alcohol) 9002-98-6 9003-01-4, Poly(acrylic acid) 9003-03-6, Poly(acrylic acid) ammonium salt 9003-05-8, Poly(acrylamide) 9003-06-9, Acrylamide-acrylic acid copolymer 9003-09-2, Poly(vinylmethylether) 9003-11-6, Ethylene oxide-propylene oxide copolymer 9003-20-7, Poly(vinylacetate) 9003-21-8D, Methylacrylate polymer, copolymer with polystyrene sulfonic acid or acrylamide 9003-39-8, Poly(N-vinylpyrrolidone) 9004-30-2 9004-32-4 9004-54-0, Dextran, uses 9004-54-0D, Dextran, sodium salt 9004-54-0D, Dextran, sulfate 9004-57-3 9004-58-4, Cellulose-ethyl hydroxyethyl ether 9004-62-0, Cellulose-hydroxyethyl ether 9004-74-4, Poly(ethylene glycol) monomethyl ether 9010-77-9, Poly(ethylene-co-acrylic acid) 9015-73-0 9016-06-2 12737-61-0, Polyglycerol methacrylate) 15214-89-8D, 2-Acrylamido-2-methyl-1-propanesulfonic acid, copolymer 25014-12-4, Polymethacrylamide. 25014-15-7, Poly(2-vinylpyridine) 25119-64-6, Poly(itaconic acid) 25154-86-3D, Dimethylamino ethylmethacrylate polymer, copolymer with polystyrene sulfonic acid or acrylamide 25189-55-3, Poly(N-isopropylacrylamide) 25233-30-1, Poly(aniline) 25322-68-3, Poly(ethylene glycol) 25549-84-2, Poly(acrylic acid) sodium salt 25703-79-1, Poly(2-hydroxypropyl methacrylate) 25805-17-8, Poly(2-ethyl-2oxazoline) 25988-63-0 26099-09-2, Poly(maleic acid) 26101-52-0, Poly(vinylsulfonic acid) 26101-52-0D, Poly(vinylsulfonic acid), sodium salt 26793-34-0D, copolymer with polystyrene sulfonic acid or acrylamide 26914-43-2D, Styrene sulfonic acid, copolymer containing 27754-99-0, Poly(vinylphosphonic acid) 28265-35-2, Butadiene-maleic acid copolymer 28805-15-4, Poly(methacrylic acid) ammonium salt 30581-59-0D, Vinylpyrrolidone-dimethylaminoethyl methylacrylate copolymer, quaternized with di-Et sulfate, (tri-Me ammonium) propylmethacrylamide Me sulfate and (tri-Me ammonium) ethylmethacrylamide Me sulfate. 50851-57-5, Polystyrenesulfonic acid 50851-57-5D, Polystyrenesulfonic acid, ammonium salt 50851-57-5D, Polystyrenesulfonic acid, lithium salt 50851-57-5D, Polystyrenesulfonic acid, potassium salt 50851-57-5D, Polystyrenesulfonic acid, sodium salt 54193-36-1, Poly(methacrylic acid) sodium salt 226984-81-2 391201-84-6, Acrylamide-2-methacryloxyethyltrimethylammonium bromide copolymer  
RL: DEV (Device component use); USES (Uses)  
(package structure of organic LED using hydrophilic polymer desiccant)

L7 ANSWER 3 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:1284896 HCAPLUS

DN 144:23765

TI Polymer sealing compositions and organic electroluminescent devices using them

IN Ikeda, Takeshi; Fujimori, Shigeo; Oka, Tetsuo

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
|    | -----         | ---- | -----    | -----           | -----        |
| PI | JP 2005336219 | A    | 20051208 | JP 2004-152892  | 20040524 <-- |

PRAI JP 2004-152892

20040524

AB Title compns. comprise amino-containing siloxanes and epoxy resins. The compns. may comprise epoxy-containing siloxanes and amino resins. Thus, an organic electroluminescent device was sealed with a composition containing Epikote 825 (bisphenol A-type epoxy resin) and BY 16-871EG (diaminosiloxane) to give a test piece showing area ratio of light-emitting regions  $\geq 99\%$  after 500 h at 80°.

TI Polymer sealing compositions and organic electroluminescent devices using them

PI JP 2005336219 A 20051208

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2005336219 | A | 20051208 | JP 2004-152892 | 20040524 <-- |
|----|---------------|---|----------|----------------|--------------|

AB Title compns. comprise amino-containing siloxanes and epoxy resins. The compns. may comprise epoxy-containing siloxanes and amino resins. Thus, an organic electroluminescent device was sealed with a composition containing Epikote 825 (bisphenol A-type epoxy resin) and BY 16-871EG (diaminosiloxane) to give a test piece showing area ratio of light-emitting regions  $\geq 99\%$  after 500 h at 80°.

ST epoxy resin polysiloxane sealant electroluminescent device;  
amino epoxy siloxane sealant electroluminescent device

IT Polysiloxanes, uses

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (epoxy; polymer compns. for sealing of electroluminescent devices having stable light-emitting regions)

IT Electroluminescent devices

Electronic packaging materials

(polymer compns. for sealing of electroluminescent devices having stable light-emitting regions)

IT Epoxy resins, uses

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polysiloxane-; polymer compns. for sealing of electroluminescent devices having stable light-emitting regions)

IT 870451-06-2P, BY 16-871EG-Epikote 825 copolymer 870451-07-3P, BY 16-871EG-diethylenetriamine-Epikote 825 copolymer 870451-08-4P, 1,3-Bis(3-glycidoxypentyl)-1,1,3,3-tetramethyldisiloxane-diethylenetriamine-Epikote 825 copolymer

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polymer compns. for sealing of electroluminescent devices having stable light-emitting regions)

L7 ANSWER 4 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:1282903 HCAPLUS

DN 144:13904

TI Organic electroluminescent device and its production method

IN Kohata, Tomokazu

PA Bando Chemical Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2005340042 | A | 20051208 | JP 2004-158663 | 20040528 <-- |
|----|---------------|---|----------|----------------|--------------|

PRAI JP 2004-158663 20040528

OS MARPAT 144:13904

AB Disclosed is an organic electroluminescent device comprising a hole injection/transport layer that is made of the crosslinked triarylamine

represented by N[p-C6H4N(Ph)p-C6H4N(Ph)R]3 [R = R1HC=CR2COO-R3- [R1 and R2 = H, alkyl, aryl, etc.; and R3 = alkylene]].

TI Organic electroluminescent device and its production method

PI JP 2005340042 A 20051208

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2005340042 | A | 20051208 | JP 2004-158663 | 20040528 <-- |
|----|---------------|---|----------|----------------|--------------|

AB Disclosed is an organic electroluminescent device comprising a hole injection/transport layer that is made of the crosslinked triarylamine represented by N[p-C6H4N(Ph)p-C6H4N(Ph)R]3 [R = R1HC=CR2COO-R3- [R1 and R2 = H, alkyl, aryl, etc.; and R3 = alkylene]].

ST org electroluminescent device hole injection transport triarylamine crosslinking

IT Electroluminescent devices  
(hole injection/transport layer for organic electroluminescent device)

IT 74-31-7, N,N'-Diphenyl-1,4-phenylenediamine 920-46-7, Methacryloyl chloride 4181-20-8 39252-69-2, 2-Iodoethylbenzoate

RL: RCT (Reactant); RACT (Reactant or reagent)

(hole injection/transport layer for organic electroluminescent device)

IT 870137-97-6P 870137-98-7P 870137-99-8P 870138-00-4P  
870138-01-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(hole injection/transport layer for organic electroluminescent device)

L7 ANSWER 5 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:1020832 HCAPLUS

DN 143:315109

TI Light-emitting substance containing phosphor complex and polysiloxane and light-emitting devices using it

IN Barachi, Sabramanianm; Ohara, Hidehiko; Kijima, Naoto

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 27 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |               |   |          |               |              |
|----|---------------|---|----------|---------------|--------------|
| PI | JP 2005255912 | A | 20050922 | JP 2004-71404 | 20040312 <-- |
|----|---------------|---|----------|---------------|--------------|

PRAI JP 2004-71404 20040312

AB The claimed substance contains a phosphor complex and a polysiloxane, and at least part of the polysiloxane has a cage structure. The light-emitting device has a 1st light-emitting part for irradiating UV (350-415 nm) to visible light to a 2nd light-emitting part which generates visible light having wavelength longer than the irradiated light, where the 2nd light-emitting part contains the claimed substance as a wavelength conversion material. Lighting devices and display devices using the light-emitting devices are also claimed. The claimed substance has high luminescence intensity, color rendition, and wide color reproduction range.

PI JP 2005255912 A 20050922

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |               |   |          |               |              |
|----|---------------|---|----------|---------------|--------------|
| PI | JP 2005255912 | A | 20050922 | JP 2004-71404 | 20040312 <-- |
|----|---------------|---|----------|---------------|--------------|

ST phosphor luminescent intensity color rendition; cage polysiloxane phosphor complex light emit substance; electroluminescent device phosphor complex cage polysiloxane; lighting device phosphor complex cage polysiloxane; display device phosphor complex cage polysiloxane

IT Electroluminescent devices

Optical imaging devices

# Phosphors

(light-emitting substance containing phosphor complex and cage polysiloxane for high luminescence intensity and color rendition)

IT 12121-29-8P 29226-47-9P 31692-79-2P 837366-16-2P  
864848-26-0P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(light-emitting substance containing phosphor complex and cage polysiloxane for high luminescence intensity and color rendition)

L7 ANSWER 6 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:963240 HCAPLUS

DN 143:256818

TI Organic electroluminescent device

IN Okuda, Daisuke; Sato, Katsuhiko; Mashimo, Kiyokazu; Ishii, Toru; Moriyama, Hiroaki; Agata, Takeshi; Ozaki, Tadayoshi; Hirose, Eiichi; Yoneyama, Hiroto; Seki, Miko; Nishino, Yohei

PA Fuji Xerox Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 2005235645 | A    | 20050902 | JP 2004-44924   | 20040220 <-- |
| PRAI | JP 2004-44924 |      | 20040220 |                 |              |

AB The invention relates to an organic electroluminescent device comprising a charge transporting polyether represented by R-O-[A-O]p-R [A = -(T)l-C6H4N(Ar)X[N(Ar)C6H4]k(T)l- and -(T)l-C6H4-C6H4N(Ar)X[N(Ar)C6H4-C6H4]k(T)l- [Ar = aromatic group; X = divalent aromatic group; T = Cl-6 divalent

normal chain hydrocarbon or C2-10 branched chain hydrocarbon; k and l = 0 or 1]; R = H, alkyl, aryl, and aralkyl; p = 5-5000 integer], wherein the electronically excited triplet state involves for the generation of the electroluminescence.

TI Organic electroluminescent device

PI JP 2005235645 A 20050902

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2005235645 | A    | 20050902 | JP 2004-44924   | 20040220 <-- |

AB The invention relates to an organic electroluminescent device comprising a charge transporting polyether represented by R-O-[A-O]p-R [A = -(T)l-C6H4N(Ar)X[N(Ar)C6H4]k(T)l- and -(T)l-C6H4-C6H4N(Ar)X[N(Ar)C6H4-C6H4]k(T)l- [Ar = aromatic group; X = divalent aromatic group; T = Cl-6 divalent

normal chain hydrocarbon or C2-10 branched chain hydrocarbon; k and l = 0 or 1]; R = H, alkyl, aryl, and aralkyl; p = 5-5000 integer], wherein the electronically excited triplet state involves for the generation of the electroluminescence.

ST org electroluminescent device polyether triplet state

IT Luminescent substances

(electroluminescent; organic electroluminescent device)

IT Electroluminescent devices

Phosphorescent substances

(organic electroluminescent device)

IT Polyethers, uses

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device)

IT 675622-69-2 862852-20-8 862852-22-0

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device)

IT 863499-39-2  
RL: DEV (Device component use); USES (Uses)  
(phosphorescent guest; organic electroluminescent device)

L7 ANSWER 7 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:962983 HCAPLUS

DN 143:275718

TI Cellulose acylate film for optical film in optical imaging device and photographic film substrate

IN Kato, Eiichi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 87 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 2005232429 | A    | 20050902 | JP 2004-151331  | 20040521 <-- |
| PRAI | JP 2004-14093 | A    | 20040122 |                 |              |

AB The title film is made of cellulose acylate, wherein hydrophilic resin particles of  $\leq 100$  nm average diameter are added in the film. The film show improved durability.

PI JP 2005232429 A 20050902

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2005232429 | A    | 20050902 | JP 2004-151331  | 20040521 <-- |

IT Electroluminescent devices

(displays, organic; cellulose acylate film for optical film in optical imaging device and photog. film substrate)

IT Luminescent screens

(electroluminescent, organic; cellulose acylate film for optical film in optical imaging device and photog. film substrate)

IT 9079-96-3P, 2-Hydroxyethyl methacrylate/divinylbenzene copolymer

863664-48-6P 863664-51-1P 863664-55-5P 863664-57-7P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(cellulose acylate film for optical film in optical imaging device and photog. film substrate)

L7 ANSWER 8 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:960527 HCAPLUS

DN 143:256792

TI Organic electroluminescent device

IN Okuda, Daisuke; Sato, Katsuhiko; Mashimo, Kiyokazu; Ishii, Toru; Moriyama, Hiroaki; Agata, Takeshi; Ozaki, Tadayoshi; Hirose, Eiichi; Yoneyama, Hiroto; Seki, Mieko; Nishino, Yohei

PA Fuji Xerox Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 2005235646 | A    | 20050902 | JP 2004-44925   | 20040220 <-- |
| PRAI | JP 2004-44925 |      | 20040220 |                 |              |

AB The invention relates to an organic electroluminescent device comprising a charge transporting polyester represented by

$R-(O-Y)_n-O-[C(O)-A-C(O)-O-(Y-O)_n]_p-R$  and  $B-[C(O)-A-C(O)-O-(Y-O)_n-C(O)-Z-C(O)-O-(Y-O)_n]-C(O)-A-C(O)-B'$  [A = (T)l(O)m-C<sub>6</sub>H<sub>4</sub>N(Ar)X[N(Ar)-C<sub>6</sub>H<sub>4</sub>]k(O)m(T)l and (T)l(O)m-C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>N(Ar)X[N(Ar)-C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>]k(O)m(T)l [Ar = aromatic group; X = divalent aromatic group; T = C1-6 divalent normal chain

hydrocarbon or C2-10 branched chain hydrocarbon; k, l, and m = 0 or 1; R = H, alkyl, aryl, and aralkyl; Y = divalent alc. residue; Z = divalent carboxylic acid residue; n = 1-5 integer; p = 5-5000 integer; B and B' = -O-(Y-O)n-R and O-(Y-O)n-CO-O-R' [R' = alkyl, aryl, and aralkyl]], wherein the electronically excited triplet state involves for the generation of the electroluminescence.

TI Organic electroluminescent device

PI JP 2005235646 A 20050902

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| JP 2005235646 | A    | 20050902 | JP 2004-44925   | 20040220 <-- |

PI JP 2005235646 A 20050902 JP 2004-44925 20040220 <--

AB The invention relates to an organic electroluminescent device comprising a charge transporting polyester represented by R-(O-Y)n-O-[C(O)-A-C(O)-O-(Y-O)n]p-R and B-[C(O)-A-C(O)-O-(Y-O)n-C(O)-Z-C(O)-O-(Y-O)n]-C(O)-A-C(O)-B' [A = (T)l(O)m-C6H4N(Ar)X[N(Ar)-C6H4]k(O)m(T)l and (T)l(O)m-C6H4C6H4N(Ar)X[N(Ar)-C6H4C6H4]k(O)m(T)l [Ar = aromatic group; X = divalent aromatic group; T = C1-6 divalent normal chain hydrocarbon or C2-10 branched chain hydrocarbon; k, l, and m = 0 or 1; R = H, alkyl, aryl, and aralkyl; Y = divalent alc. residue; Z = divalent carboxylic acid residue; n = 1-5 integer; p = 5-5000 integer; B and B' = -O-(Y-O)n-R and O-(Y-O)n-CO-O-R' [R' = alkyl, aryl, and aralkyl]], wherein the electronically excited triplet state involves for the generation of the electroluminescence.

ST org electroluminescent device polyester triplet state

IT Luminescent substances  
(electroluminescent; organic electroluminescent device)

IT Electroluminescent devices  
Phosphorescent substances  
(organic electroluminescent device)

IT Polyesters, uses  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic electroluminescent device)

IT 605664-89-9P 605664-90-2P 672921-44-7P 847982-69-8P 847982-70-1P  
862851-84-1P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic electroluminescent device)

IT 863499-39-2P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(phosphorescent guest; organic electroluminescent device)

L7 ANSWER 9 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:726201 HCAPLUS

DN 143:202645

TI Epoxy resin compositions for sealing of organic electroluminescent devices

IN Ikeda, Takeshi; Fujiwara, Takenori; Fujimori, Shigeo

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| JP 2005213316 | A    | 20050811 | JP 2004-19427   | 20040128 <-- |

PI JP 2005213316 A 20050811 JP 2004-19427 20040128 <--

PRAI JP 2004-19427 20040128

AB The compns. are obtained by mixing (A) epoxy resins, (B) thermosetting curing agents, and (C) silane coupling agents for crosslinking. The devices are sealed with the compns. Increase in non-emitting regions



after long use is prevented.

TI Epoxy resin compositions for sealing of organic electroluminescent devices

PI JP 2005213316 A 20050811

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| JP 2005213316 | A    | 20050811 | JP 2004-19427   | 20040128 <-- |

ST epoxy sealant electroluminescent device storage stability;  
silane coupling agent epoxy sealant electroluminescent device

IT Silanes  
RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(coupling agents; epoxy resin compns. with high durability for sealants of electroluminescent devices)

IT Electroluminescent devices  
Electronic packaging materials  
(epoxy resin compns. with high durability for sealants of electroluminescent devices)

IT Epoxy resins, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(epoxy resin compns. with high durability for sealants of electroluminescent devices)

IT Coupling agents  
(silanes; epoxy resin compns. with high durability for sealants of electroluminescent devices)

IT 34390-22-2, (Aminophenyl)trimethoxysilane  
RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(SIA 0599.2, coupling agents; epoxy resin compns. with high durability for sealants of electroluminescent devices)

IT 919-30-2, KBE 903 2530-83-8, KBM 403  
RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(coupling agents; epoxy resin compns. with high durability for sealants of electroluminescent devices)

IT 26402-42-6P  
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(epoxy resin compns. with high durability for sealants of electroluminescent devices)

L7 ANSWER 10 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:674390 HCAPLUS

DN 143:412686

TI Electroactive luminescent self-assembled bio-organic nanowires:  
Integration of semiconducting oligoelectrolytes within amyloidogenic proteins. [Erratum to document cited in CA143:255819]

AU Herland, Anna; Bjoerk, Per; Nilsson, K. Peter R.; Olsson, Johan D. M.; Asberg, Peter; Konradsson, Peter; Hammarstroem, Per; Inganaes, Olle

CS Biomolecular and Organic Electronics, IFM, Linköping University, Linköping, SE-581 83, Swed.

SO Advanced Materials (Weinheim, Germany) (2005), 17(14), 1703  
CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB The correct version of Figure 3 is given.

SO Advanced Materials (Weinheim, Germany) (2005), 17(14), 1703  
CODEN: ADVMEW; ISSN: 0935-9648

IT Fluorescence quenching

Luminescence, electroluminescence

Nanowires

(electroactive luminescent self-assembled bio-organic nanowires:  
integration of semiconducting oligoelectrolytes within amyloidogenic  
proteins (Erratum))

IT 11070-73-8, Bovine insulin 848360-62-3 863252-93-1

RL: PRP (Properties)

(electroactive luminescent self-assembled bio-organic nanowires:  
integration of semiconducting oligoelectrolytes within amyloidogenic  
proteins (Erratum))

L7 ANSWER 11 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:571673 HCAPLUS

DN 143:255819

TI Electroactive luminescent self-assembled bio-organic nanowires:  
Integration of semiconducting oligoelectrolytes within amyloidogenic  
proteins

AU Herland, Anna; Bjoerk, Per; Nilsson, K. Peter R.; Olsson, Johan D. M.;  
Asberg, Peter; Konradsson, Peter; Hammarstroem, Per; Inganaes, Olle

CS Biomolecular and Organic Electronics, IFM, Linkoeeping University,  
Linkoeeping, SE-581 83, Swed.

SO Advanced Materials (Weinheim, Germany) (2005), 17(12), 1466-1471

CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB Electroactive luminescent bio-organic nanowires, 10 nm in width and with  
lengths up to 10  $\mu$ m (see Figure), are generated through co-assembly of  
protein amyloid fibrils with conjugated oligoelectrolytes. The  
electrooptical properties of the wires are demonstrated with reversible  
electrochem. doping-induced fluorescence quenching, providing evidence for  
both elec. transport and electroactivity.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Advanced Materials (Weinheim, Germany) (2005), 17(12), 1466-1471

CODEN: ADVMEW; ISSN: 0935-9648

IT Fluorescence quenching

Luminescence, electroluminescence

Nanowires

(electroactive luminescent self-assembled bio-organic nanowires:  
integration of semiconducting oligoelectrolytes within amyloidogenic  
proteins)

IT 11070-73-8, Bovine insulin 848360-62-3 863252-93-1

RL: PRP (Properties)

(electroactive luminescent self-assembled bio-organic nanowires:  
integration of semiconducting oligoelectrolytes within amyloidogenic  
proteins)

L7 ANSWER 12 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:493644 HCAPLUS

DN 143:27783

TI Light-weight and slim resin sheets with good light transmittance and  
impact resistance, and low thermal shrinkage and expansion for liquid  
crystal cell substrates, electroluminescent display, and solar  
cell substrates

IN Harada, Tadaaki; Akada, Yuuzou; Sakata, Yoshimasa

PA Nitto Denko Corporation, Japan

SO PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

PI WO 2005052037 A1 20050609 WO 2004-JP17416 20041124 <--  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,  
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK,  
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,  
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,  
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG

JP 2005156840 A 20050616 JP 2003-394044 20031125 <--  
CN 1886447 A 20061227 CN 2004-80034596 20041124  
US 2007128376 A1 20070607 US 2006-580714 20060525

PRAI JP 2003-394044 A 20031125  
WO 2004-JP17416 W 20041124

AB Title resin sheets with haze ≤10% comprises a resin curing layer comprising a resin containing an inorg. fine particle and a glass fabric. Thus, NEA 2116F S 136 (glass fabric) was impregnated with a composition comprising Nanopox XP 22/0316 24.6 (based on epoxy resin), EXA 7320 (dicyclopentadiene type epoxy resin) 6.9, methylnadic anhydride 36.2, and tetrabutylphosphonium o,o-diethylphosphodithioate 0.72 parts, dried for 60 min under reduced vacuum, laminated onto an acrylic urethane-coated endless belt and cured, and removed the resulting laminate from the belt to give a sheet with refractive index between resin-coated substrate and non-coated substrate 0.003, linear thermal expansion 5 + 10-5/°, light transmittance 88%, haze 3%, surface roughness 200 nm, and good flexibility.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Light-weight and slim resin sheets with good light transmittance and impact resistance, and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates

PI WO 2005052037 A1 20050609

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

PI WO 2005052037 A1 20050609 WO 2004-JP17416 20041124 <--  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,  
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK,  
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,  
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,  
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG

JP 2005156840 A 20050616 JP 2003-394044 20031125 <--  
CN 1886447 A 20061227 CN 2004-80034596 20041124  
US 2007128376 A1 20070607 US 2006-580714 20060525

ST light slim resin sheet transmittance thermal shrinkage expansion; liq crystal cell electroluminescent display solar cell; epoxy resin impregnated glass fabric acrylic urethane hardcoat

IT Glass fiber fabrics

RL: MOA (Modifier or additive use); USES (Uses)  
(NEA 2116F-S136, substrate impregnated with; light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT Electroluminescent devices  
(displays; light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT Luminescent screens  
(electroluminescent; light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT Reinforced plastics  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(glass fiber-reinforced; light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT Coating materials  
Liquid crystal displays  
Plastic films  
Solar cells  
Transparent materials  
(light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT Epoxy resins, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT 332415-23-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(hardcoat; light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT 7631-86-9, Silica, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(substrate containing; light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

IT 2386-87-0DP, polymers with epoxy resins 25134-21-8DP, Methylnadic anhydride, polymers with epoxy resins and epoxy compds. 183185-09-3DP, polymers with epoxy compds. 850307-00-5DP, Nanopox XP 22/0316, polymers with epoxy resins 853154-35-5DP, EXA 7320, polymers with epoxy compds.  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(substrate; light-weight and slim resin sheets with good light transmittance and low thermal shrinkage and expansion for liquid crystal cell substrates, electroluminescent display, and solar cell substrates)

L7 ANSWER 13 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2005:490328 HCAPLUS  
DN 143:27695  
TI Impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells

IN Harada, Tadaaki; Akada, Yuuzou; Sakata, Yoshimasa  
 PA Nitto Denko Corporation, Japan  
 SO PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO.   | DATE         |
|------|--|------|----------|-------------------|--------------|
| PI   | WO 2005051654  | A1   | 20050609 | WO 2004-JP17413   | 20041124 <-- |
|      | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,<br>CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,<br>GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK,<br>LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,<br>NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,<br>TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW<br>RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,<br>AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,<br>EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,<br>SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,<br>NE, SN, TD, TG |      |          |                   |              |
|      | JP 2005153273  | A    | 20050616 | JP 2003-393881    | 20031125 <-- |
|      | CN 1886259   | A    | 20061227 | CN 2004-80034688  | 20041124     |
|      | US 2007042168  | A1   | 20070222 | US 2006-10 580399 | 20060524     |
| PRAI | JP 2003-393881   | A    | 20031125 |                   |              |
|      | WO 2004-JP17413  | W    | 20041124 |                   |              |

AB Title sheets are excellent in light transmittance for not lowering the display quality of displays. The resin sheets with haze  $\leq 10\%$  comprise a cured resin layer containing a fabric-like body made of glass fibers and a overcoat layer formed on the surface of the cured resin layer to give surface roughness (Rt)  $\leq 200$  nm. Thus, a glass fabric (NEA 2116F S 136) was impregnated into a solution comprising 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate 35.9, EXA 7230 (dicyclopentadiene type epoxy resin) 10.1, methyl nadic anhydride 52.9, and tetrabutylphosphonium o,o-diethylphosphodithioate 1.1 parts, laminated onto an acrylic urethane coated endless belt and cured, removed the resulting laminate from the belt, post-cured at 200° for 1 h, an overcoat comprising OXT 221 91, 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate 4.8, and Adeka Optomer SP 170 4.3 parts was applied onto the cured-resin layer, and irradiated with a UV-ray to give a resin sheet having a surface overcoat, showing thermal expansion coefficient  $1.8 + 10^{-5}/^{\circ}$ , light transmittance 88%, haze 5%, and good flexibility.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells

|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|----|--|------|----------|-----------------|--------------|
| PI | WO 2005051654  | A1   | 20050609 | WO 2004-JP17413 | 20041124 <-- |
|    | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,<br>CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,<br>GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK,<br>LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,<br>NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,<br>TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW<br>RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,<br>AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,<br>EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,<br>SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,<br>NE, SN, TD, TG |      |          |                 |              |

|  |               |    |          |                  |                 |
|--|---------------|----|----------|------------------|-----------------|
|  | JP 2005153273 | A  | 20050616 | JP 2003-393881   | 20031125 <--    |
|  | CN 1886259    | A  | 20061227 | CN 2004-80034688 | 20041124        |
|  | US 2007042168 | A1 | 20070222 | US 2006-10       | 580399 20060524 |

ST impact resistant thin resin sheet lightness thermal shrinkage expansion; liq crystal cell display electroluminescent display solar cell; epoxy resin impregnated glass fabric; acrylic polyurethane hardcoat epoxy overcoat

IT Glass fiber fabrics  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (NEA 2116F-S136, substrate impregnated with; impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT Epoxy resins, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (crosslinked, substrate, fabric reinforced; impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT Electroluminescent devices  
 (displays; impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT Luminescent screens  
 (electroluminescent; impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT Reinforced plastics  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (fiber-reinforced; impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT Coating materials  
 Impact-resistant materials  
 Liquid crystal displays  
 Plastic films  
 Solar cells  
 (impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT 332415-23-3P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (hardcoat; impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT 167488-43-9P 191611-67-3P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (overcoat; impact-resistant thin resin sheets with lightness and low thermal shrinkage/expansion for liquid crystal cell substrates, liquid crystal displays, electroluminescent displays, and solar cells)

IT 2386-87-ODP, 3,4-Epoxy cyclohexylmethyl-3,4-epoxycyclohexanecarboxylate, polymers with dicyclopentadiene type epoxy resins and anhydrides  
 25134-21-8DP, Methyl nadic anhydride, polymers with dicyclopentadiene type epoxy resins and epoxy compds. 183185-09-3DP, polymers with epoxy

compds. and anhydrides 853129-88-1DP, EXA 7230, polymers with epoxy  
 compds. and anhydrides  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (substrate, fabric reinforced; impact-resistant thin resin sheets with  
 lightness and low thermal shrinkage/expansion for liquid crystal cell  
 substrates, liquid crystal displays, electroluminescent  
 displays, and solar cells)

L7 ANSWER 14 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:470099 HCAPLUS

DN 143:8856

TI Epoxy resin sheets showing high strength and their application

IN Harada, Tadaaki; Akada, Yuzo; Umehara, Shunji

PA Nitto Denko Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2005139234  | A    | 20050602 | JP 2003-374839  | 20031104 <-- |
| PRAI | JP 2003-374839 |      | 20031104 |                 |              |

AB The sheets, useful as substrates for liquid crystal displays,  
 electroluminescent displays, and solar cells, contain  
 polysulfide-epoxy resins. Thus, a laminate comprising a hard coating  
 layer comprising a cured product of a urethane acrylate and a layer  
 comprising a cured product of a composition containing Flep 50

(polysulfide-epoxy  
 resin) 26.6, 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate  
 26.6, methylhexahydrophthalic anhydride 45.8, and Bu4P+(EtO)2P(S)S- 1.0  
 part showed breaking strength 200 N.

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-----------------|------|----------|-----------------|--------------|
| PI | JP 2005139234 A |      | 20050602 |                 |              |
| PI | JP 2005139234   | A    | 20050602 | JP 2003-374839  | 20031104 <-- |

AB The sheets, useful as substrates for liquid crystal displays,  
 electroluminescent displays, and solar cells, contain  
 polysulfide-epoxy resins. Thus, a laminate comprising a hard coating  
 layer comprising a cured product of a urethane acrylate and a layer  
 comprising a cured product of a composition containing Flep 50

(polysulfide-epoxy  
 resin) 26.6, 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate  
 26.6, methylhexahydrophthalic anhydride 45.8, and Bu4P+(EtO)2P(S)S- 1.0  
 part showed breaking strength 200 N.

ST epoxy polysulfide liq crystal display strength; electroluminescent  
 display substrate epoxy polysulfide; solar cell substrate epoxy  
 polysulfide

IT Polyisocyanurates

RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic, hard coatings; polysulfide-epoxy resin sheets showing high  
 strength as substrates for liquid crystal displays,  
 electroluminescent displays, and solar cells)

IT Electroluminescent devices

(displays; polysulfide-epoxy resin sheets showing high strength as  
 substrates for liquid crystal displays, electroluminescent  
 displays, and solar cells)

IT Luminescent screens

(electroluminescent; polysulfide-epoxy resin sheets showing  
 high strength as substrates for liquid crystal displays,  
 electroluminescent displays, and solar cells)

IT Polysulfides  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (epoxy, dianhydride-crosslinked; polysulfide-epoxy resin sheets showing  
 high strength as substrates for liquid crystal displays,  
 electroluminescent displays, and solar cells)

IT Epoxy resins, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses).  
 (polysulfide-, dianhydride-crosslinked; polysulfide-epoxy resin sheets  
 showing high strength as substrates for liquid crystal displays,  
 electroluminescent displays, and solar cells)

IT Liquid crystal displays  
 Solar cells  
 (polysulfide-epoxy resin sheets showing high strength as substrates for  
 liquid crystal displays, electroluminescent displays, and solar  
 cells)

IT 332415-23-3P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (hard coatings; polysulfide-epoxy resin sheets showing high strength as  
 substrates for liquid crystal displays, electroluminescent  
 displays, and solar cells)

IT 852355-72-7P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polysulfide-epoxy resin sheets showing high strength as substrates for  
 liquid crystal displays, electroluminescent displays, and solar  
 cells)

L7 ANSWER 15 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:428637 HCAPLUS

DN 142:472699

TI Manufacture of alignment films for vertically aligning LC (liquid  
 crystals), aligned LC films, optical films comprising same LC films, and  
 optical imaging devices

IN Inoue, Tetsuo; Moroishi, Hiroshi; Sudo, Shunsuke

PA Nitto Denko Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|------|--|------|----------|-----------------|--------------|
| PI   | JP 2005128315  | A    | 20050519 | JP 2003-364780  | 20031024 <-- |
| PRAI | JP 2003-364780   |      | 20031024 |                 |              |
| AB   | The alignment films are manufactured by a process comprising steps of (1)<br>applying composition containing 100 weight parts of polymers having C12-28<br>alkyl side<br>chains, and 200-2000 weight parts of reactive diluents (preferably<br>(meth)acrylic monomers and/or oligomers) on substrates, and (2) radiation<br>curing. LCs are applied on the alignment films to give LC-aligned films.<br>Also claimed are optical films comprising the LC-aligned films. Also<br>claimed are optical imaging devices (e.g., LCD, organic<br>electroluminescent displays, plasma display panels) comprising the<br>alignment films, LC-aligned films, or optical films. The alignment films<br>have high surface hardness. |      |          |                 |              |

PI JP 2005128315 A 20050519

|  | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------------|------|------|-----------------|------|
|--|------------|------|------|-----------------|------|

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2005128315 | A | 20050519 | JP 2003-364780 | 20031024 <-- |
|----|---------------|---|----------|----------------|--------------|

AB The alignment films are manufactured by a process comprising steps of (1)



applying composition containing 100 weight parts of polymers having C12-28 alkyl side

chains, and 200-2000 weight parts of reactive diluents (preferably (meth)acrylic monomers and/or oligomers) on substrates, and (2) radiation curing. LCs are applied on the alignment films to give LC-aligned films. Also claimed are optical films comprising the LC-aligned films. Also claimed are optical imaging devices (e.g., LCD, organic electroluminescent displays, plasma display panels) comprising the alignment films, LC-aligned films, or optical films. The alignment films have high surface hardness.

ST liq crystal vertical alignment film polymer; UV radical polymn film vertical alignment LC; optical film liq crystal vertical alignment polymer film; LCD optical film prepn vertical aligned LC; plasma panel display optical film prepn; org electroluminescent display optical film prepn

IT Electroluminescent devices

(displays, organic, optical films in; alignment film containing UV-cured polymer, for vertically aligning LC, and optical film for imaging devices)

IT Luminescent screens

(electroluminescent, organic, optical films in; alignment film containing UV-cured polymer, for vertically aligning LC, and optical film for imaging devices)

IT 25986-77-0P, Octadecyl acrylate homopolymer 26376-84-1P, 2-Ethylhexyl acrylate-octadecyl acrylate copolymer 71512-49-7P, Light-Acrylate DCP-A homopolymer 489395-95-1P, 2-Ethylhexyl acrylate-octadecyl acrylate block copolymer 807345-39-7P, Light Acrylate DCP-A-UA 306T copolymer  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (in alignment film; alignment film containing UV-cured polymer, for vertically aligning LC, and optical film for imaging devices)

L7 ANSWER 16 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:428402 HCAPLUS

DN 142:472692

TI Patternable photocurable polymer compositions with good heat resistance and storage stability, transparent films and spacers therefrom, and displays therewith

IN Sato, Hiroyuki; Itami, Setsuo; Watanabe, Eiji; Oizumi, Fumitaka

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2005126699  | A    | 20050519 | JP 2004-283981  | 20040929 <-- |
| PRAI | JP 2003-340255 | A    | 20030930 |                 |              |

OS MARPAT 142:472692

AB The compns. comprise (A) alkali-soluble polymers prepared by radical polymerization of

oxetanyl monomers 5-90, carboxyl-containing monomers 5-50, and I (R1 = H, Me; R2 = H, C1-5 alkyl; n = 1-5) 2-30%, (B) polymerizable double bond-containing compds., (C) photopolymn. initiators, (D) solvents (containing  $\geq 20\%$  of those with b.p. 100-200°), and optionally (E) thermally curable resins. Transparent films and spacers from the compns., showing good flexibility and compression recovery, are useful for liquid crystal displays, electroluminescent displays, etc.

PI JP 2005126699 A 20050519

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2005126699 | A    | 20050519 | JP 2004-283981  | 20040929 <-- |

AB The compns. comprise (A) alkali-soluble polymers prepared by radical polymerization of oxetanyl monomers 5-90, carboxyl-containing monomers 5-50, and I (R1 = H, Me; R2 = H, C1-5 alkyl; n = 1-5) 2-30%, (B) polymerizable double bond-containing compds., (C) photopolymer. initiators, (D) solvents (containing  $\geq 20\%$  of those with b.p. 100-200°), and optionally (E) thermally curable resins. Transparent films and spacers from the compns., showing good flexibility and compression recovery, are useful for liquid crystal displays, electroluminescent displays, etc.

ST display spacer transparent film patternable photocurable resin; tetrahydrofuranylmethyl polyester grafted oxetanyl carboxyl acrylic polymer; photoimaging acrylic polyester LCD electroluminescent display

IT 851517-69-6P, 3-Ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-6-hydroxyhexanoic acid-methacrylic acid-tricyclo[5.2.1.0<sup>2,6</sup>]decanyl methacrylate graft copolymer tetrahydrofuranylmethyl ester 851517-71-0P, Benzyl methacrylate-3-ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-6-hydroxyhexanoic acid-methacrylic acid-tricyclo[5.2.1.0<sup>2,6</sup>]decanyl methacrylate graft copolymer tetrahydrofuranylmethyl ester 851517-73-2P, 3-Ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-6-hydroxyhexanoic acid-mono(2-methacryloyloxy ethyl) phthalate-tricyclo[5.2.1.0<sup>2,6</sup>]decanyl methacrylate graft copolymer tetrahydrofuranylmethyl ester 851517-75-4P, 3-Ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-6-hydroxyhexanoic acid-mono(2-methacryloyloxyethyl) maleate-tricyclo[5.2.1.0<sup>2,6</sup>]decanyl methacrylate graft copolymer tetrahydrofuranylmethyl ester 851517-79-8P, 3-Ethyl-3-methacryloxymethyloxetane-6-hydroxyhexanoic acid-maleic anhydride-styrene graft copolymer, tetrahydrofuranylmethyl ester, 2-hydroxyethyl methacrylate ester 851517-81-2P, 3-Ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-6-hydroxyhexanoic acid-methacrylic acid-tricyclo[5.2.1.0<sup>2,6</sup>]decanyl methacrylate graft copolymer, tetrahydrofuranylmethyl ester, carbamate with 2-methacryloyloxyethyl isocyanate 851536-66-8P, Cyclohexene-3,4-dicarboxylic acid mono(2-methacryloyloxy ethyl) ester-3-ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-6-hydroxyhexanoic acid-tricyclo[5.2.1.0<sup>2,6</sup>]decanyl methacrylate graft copolymer tetrahydrofuranylmethyl ester 851536-68-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (comprised of actual and assumed monomers; patternable photocurable polymer compns. with good heat resistance and storage stability for display transparent films or spacers)

IT 67653-78-5P, Dipentaerythritol hexaacrylate homopolymer 851486-19-6P 851486-20-9P 851486-21-0P 851486-22-1P 851486-23-2P 851486-24-3P 851486-25-4P 851486-26-5P 851517-82-3P, 3-Ethyl-3-methacryloxymethyloxetane-Kayarad TC 110S-maleic anhydride-styrene graft copolymer, ester with 2-hydroxyethyl methacrylate, polymer with 3,4-epoxycyclohexylmethyl methacrylate-ethyl acrylate copolymer and dipentaerythritol hexaacrylate-NK Oligo U 15HA copolymer 851517-84-5P, 3-Ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-Kayarad TC 110S-methacrylic acid-tricyclo[5.2.1.0<sup>2,6</sup>]decanyl methacrylate graft copolymer, carbamate with 2-methacryloyloxyethyl isocyanate, polymer with 3,4-epoxycyclohexylmethyl methacrylate-ethyl acrylate copolymer and dipentaerythritol hexaacrylate-NK Oligo U 15HA copolymer 851519-18-1P 851519-19-2P 851519-20-5P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (patternable photocurable polymer compns. with good heat resistance and storage stability for display transparent films or spacers)

IT 851486-05-0P 851486-08-3P 851486-12-9P 851517-77-6P, 3-Ethyl-3-methacryloxymethyloxetane-Kayarad TC 110S-maleic

anhydride-styrene graft copolymer, ester with 2-hydroxyethyl methacrylate 851517-80-1P, 3-Ethyl-3-methacryloxymethyloxetane-2-hydroxyethyl methacrylate-Kayarad TC 110S-methacrylic acid-tricyclo[5.2.1.0<sup>2</sup>,6]decanyl methacrylate graft copolymer, carbamate with 2-methacryloyloxyethyl isocyanate 851519-15-8P 851519-16-9P 851519-17-0P

RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(patternable photocurable polymer compns. with good heat resistance and storage stability for display transparent films or spacers)

L7 ANSWER 17 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:323482 HCAPLUS

DN 142:381921

TI Electroluminescent devices and transparent conducting films

IN Yoshikawa, Kazuhiro; Sasahara, Shuichi; Fujita, Takahiko

PA Sekisui Plastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2005100893  | A    | 20050414 | JP 2003-335470  | 20030926 <-- |
| PRAI | JP 2003-335470 |      | 20030926 |                 |              |

AB The devices comprise (A) light-emitting base elements consisting of substrates, patterned elec. conducting back layers containing  $\geq 2$  pair electrodes, dielec. layers, and light-emitting layers and (B) transparent conducting films on the light-emitting layers. Detachable transparent conducting films of elec. conducting polymer gels having adhesion properties for the devices are also claimed. The conducting films may comprise hydrogels having semi-interpenetrating polymer network structures. Desired light-emitting patterns and positions are easily obtained.

TI Electroluminescent devices and transparent conducting films

PI JP 2005100893 A 20050414

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2005100893 | A    | 20050414 | JP 2003-335470  | 20030926 <-- |

ST electroluminescent device transparent conducting film detachable; hydrogel polymer conducting film electroluminescent device; semiinterpenetrating polymer conducting film electroluminescent device

IT Fluoropolymers, uses

RL: DEV (Device component use); USES (Uses)

(dielec. layers; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT Transparent films

(elec. conductive; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT Conducting polymers

Electroluminescent devices

(electroluminescent devices having detachable transparent conducting films of polymer gels)

IT Polyesters, uses

RL: DEV (Device component use); USES (Uses)

(electroluminescent devices having detachable transparent conducting films of polymer gels)

IT Electric conductors

(films, transparent; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT Hydrogels

(polymeric; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT Interpenetrating polymer networks  
(semi-interpenetrating, conducting films; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 12047-27-7, Barium titanate, uses 25190-89-0, THV 220  
RL: DEV (Device component use); USES (Uses)  
(dielec. layers; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 7440-22-4, Silver, uses  
RL: DEV (Device component use); USES (Uses)  
(electrodes; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 7647-14-5, Sodium chloride, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(electrolytes in conducting films; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 1314-98-3, Zinc sulfide, uses  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layers; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 56-81-5, Glycerin, uses  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(plasticizing or swelling agents in conducting films; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 9002-89-5, Poly(vinyl alcohol) 9003-39-8, Polyvinylpyrrolidone  
RL: DEV (Device component use); USES (Uses)  
(semiinterpenetrating networks, conducting films; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 25034-58-6P, Acrylamide-N,N-methylenebisacrylamide copolymer  
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(semiinterpenetrating networks, conducting films; electroluminescent devices having detachable transparent conducting films of polymer gels)

IT 25038-59-9, PET, uses  
RL: DEV (Device component use); USES (Uses)  
(supports; electroluminescent devices having detachable transparent conducting films of polymer gels)

L7 ANSWER 18 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:323421 HCAPLUS

DN 142:381914

TI Electroluminescent device

IN Yoshikawa, Kazuhiro; Sasahara, Shuichi; Fujita, Takahiko

PA Sekisui Plastics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
|      | -----          | ---- | -----    | -----           | -----        |
| PI   | JP 2005100730  | A    | 20050414 | JP 2003-331086  | 20030924 <-- |
| PRAI | JP 2003-331086 |      | 20030924 |                 |              |

AB The invention relates to an electroluminescent device, suited for use in making a flexible electroluminescent device, comprising a back electrode, a dielec. layer, an electroluminescent layer, and a gel transparent conductive layer,

stacked in that order on an insulating film, wherein the gel transparent conductive layer is a polymer matrix made of a polymerizable monomer and a crosslinking monomer, and contains a plastic component or a wetting agent, a solvent, and an electrolyte.

TI Electroluminescent device

PI JP 2005100730 A 20050414

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2005100730 | A | 20050414 | JP 2003-331086 | 20030924 <-- |
|----|---------------|---|----------|----------------|--------------|

AB The invention relates to an electroluminescent device, suited for use in making a flexible electroluminescent device, comprising a back electrode, a dielec. layer, an electroluminescent layer, and a gel transparent conductive layer, stacked in that order on an insulating film, wherein the gel transparent conductive layer is a polymer matrix made of a polymerizable monomer and a crosslinking monomer, and contains a plastic component or a wetting agent, a solvent, and an electrolyte.

ST electroluminescent device flexible gel transparent conductive polymer

IT Electroluminescent devices

Electrolytes

(electroluminescent device)

IT Polyesters, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(electroluminescent device)

IT Interpenetrating polymer networks

(semi-interpenetrating; electroluminescent device)

IT 9002-89-5, Polyvinyl alcohol

RL: DEV (Device component use); USES (Uses)

(electroluminescent device)

IT 56-81-5, Glycerine, uses 1314-98-3, Zinc sulfide, uses 7647-14-5, Sodium chloride, uses 12047-27-7, Barium titanate, uses 25038-59-9, uses 25190-89-0, THV 220

RL: TEM (Technical or engineered material use); USES (Uses)

(electroluminescent device)

IT 25034-58-6, Acrylamide-N,N-methylenebisacrylamide copolymer

RL: DEV (Device component use); USES (Uses)

(polymer matrix; electroluminescent device)

L7 ANSWER 19 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:256413 HCAPLUS

DN 142:345264

TI Transparent films, transparent conductive films therefrom, preparation thereof, and liquid crystal displays, organic EL displays, and touch panels therewith

IN Okubo, Yasushi

PA Konica Minolta Holdings, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 38 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2005076000 | A | 20050324 | JP 2003-311173 | 20030903 <-- |
|----|---------------|---|----------|----------------|--------------|

|      |                |  |          |  |  |
|------|----------------|--|----------|--|--|
| PRAI | JP 2003-311173 |  | 20030903 |  |  |
|------|----------------|--|----------|--|--|

AB The transparent films, showing low birefringence and good heat resistance, contain polymer alloys consisting of cellulose esters and (crosslinked) macromol. compds. having groups reactive with residual OH in the cellulose esters, wherein the both may be crosslinked each other. The macromol. compds. may be prepared by curing of (A) polymerizable double bond-containing OH-reactive low-mol.-weight compds. and (B) plural polymerizable double bond-containing low-mol.-weight compds. [e.g., polyol (meth)acrylates]. The

films are prepared by solvent cast method (and UV curing of B). Also claimed are transparent conductive films having metal oxide- or nitride-containing moistureproof layers on one side of the above films and transparent conductive layers thereon or on the other side. In manufacturing

of

the conductive films, the moistureproof layers and the transparent conductive layers are formed by plasma CVD under (near) atmospheric pressure, applying high-frequency voltage at 100 kHz to 150 MHz and 1-50 W/cm<sup>2</sup> between opposed electrodes. Liquid crystal displays, organic EL displays, and touch panels equipped with the transparent conductive films as substrates are also claimed.

PI JP 2005076000 A 20050324

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| JP 2005076000 | A    | 20050324 | JP 2003-311173  | 20030903 <-- |

PI JP 2005076000 A 20050324 JP 2003-311173 20030903 <--

IT Electroluminescent devices

(displays; preparation of transparent films of cellulose esters and hydroxy-reactive macromols. and conductive films therefrom for LCD, organic EL displays, and touch panels)

IT Luminescent screens

(electroluminescent; preparation of transparent films of cellulose esters and hydroxy-reactive macromols. and conductive films therefrom for LCD, organic EL displays, and touch panels)

IT 848412-40-8P

RL: CPS (Chemical process); DEV (Device component use); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(preparation of transparent films of cellulose esters and hydroxy-reactive macromols. and conductive films therefrom for LCD, organic EL displays, and touch panels)

L7 ANSWER 20 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:143071 HCAPLUS

DN 144:77422

TI Electrical and electroluminescent properties of ITO/BTEO-PPV:PUI/Al

AU Ou, Chang-gang; Kong, Fan; Zheng, Yi; Zhang, Su-yang; Yang, Chang-zheng; Yuan, Ren-kuan

CS Department of Physics, Nanjing University, Nanjing, 210093, Peop. Rep. China

SO Faguang Xuebao (2004), 25(6), 639-643

CODEN: FAXUEW; ISSN: 1000-7032

PB Kexue Chubanshe

DT Journal

LA Chinese

AB Because ionized polyurethane-poly(ethylene glycol) copolymer (PUI) and poly[1,4-(2,5-bis(1,4,7-ethoxy) phenylene vinylene)-alt-1,4-(phenylene vinylene)] (BETO-PPV) can be mixed well, the authors use PUI as polymer electrolyte and BETO-PPV as luminescent polymer to fabricate light-emitting electrochem. cell (SLEC). The device structure is identical to traditional LEC. The fabrication of SLEC and measurement of the elec. and electroluminescent characteristics are reported, and the exptl. results are discussed by an electrodynamic model. Expts. and analyses show, because of congregate of cations, SLEC has a low turn-on voltage and Al can be employed as cathode as traditional LEC. Due to low d. of immobile anions in PUI, steady-state current-voltage character depends on the height of the barrier for hole injection. So the curve of SLEC's steady-state current-voltage character is nonsym. The most important characteristic of SLEC is the fast light-emitting response. The response time of SLEC is .apprx.10 ms, faster two orders of magnitude under a fixed bias than that of traditional LEC. By analyses of chemical character of BETO-PPV and PUI, oligo(ethylene oxide) side groups of

BETO-PPV chains are stuck to PUI chains so that the compound film of PUI and BETO-PPV forms a continuous network phase enabling fast ion transport. Another reason enabling fast ion transport is that a local ordered potential formed by fixed anions of SLEC forms less scatter for mobile cations than the disordered potential formed by mobile anions of traditional LEC. C-f characteristics conform SLEC's fast time response.

TI Electrical and electroluminescent properties of ITO/BTEO-PPV:PUI/Al

SO Faguang Xuebao (2004), 25(6), 639-643  
CODEN: FAXUEW; ISSN: 1000-7032

AB Because ionized polyurethane-poly(ethylene glycol) copolymer (PUI) and poly[1,4-(2,5-bis(1,4,7-ethoxy) phenylene vinylene)-alt-1,4-(phenylene vinylene)] (BETO-PPV) can be mixed well, the authors use PUI as polymer electrolyte and BETO-PPV as luminescent polymer to fabricate light-emitting electrochem. cell (SLEC). The device structure is identical to traditional LEC. The fabrication of SLEC and measurement of the elec. and electroluminescent characteristics are reported, and the exptl. results are discussed by an electrodynamic model. Expts. and analyses show, because of congregate of cations, SLEC has a low turn-on voltage and Al can be employed as cathode as traditional LEC. Due to low d. of immobile anions in PUI, steady-state current-voltage character depends on the height of the barrier for hole injection. So the curve of SLEC's steady-state current-voltage character is nonsym. The most important characteristic of SLEC is the fast light-emitting response. The response time of SLEC is .apprx.10 ms, faster two orders of magnitude under a fixed bias than that of traditional LEC. By analyses of chemical character of BETO-PPV and PUI, oligo(ethylene oxide) side groups of BETO-PPV chains are stuck to PUI chains so that the compound film of PUI and BETO-PPV forms a continuous network phase enabling fast ion transport. Another reason enabling fast ion transport is that a local ordered potential formed by fixed anions of SLEC forms less scatter for mobile cations than the disordered potential formed by mobile anions of traditional LEC. C-f characteristics conform SLEC's fast time response.

IT Band structure

Electric capacitance

Electric current-potential relationship

Luminescence, electroluminescence

(elec. and electroluminescent properties of indium tin oxide/BTEO-PPV:PUI/aluminum light-emitting electrochem. cells)

IT Light sources

(electrochem.; elec. and electroluminescent properties of indium tin oxide/BTEO-PPV:PUI/aluminum light-emitting electrochem. cells)

IT Transport properties

(ionic; elec. and electroluminescent properties of indium tin oxide/BTEO-PPV:PUI/aluminum light-emitting electrochem. cells)

IT Electrolytic cells

(light-emitting; elec. and electroluminescent properties of indium tin oxide/BTEO-PPV:PUI/aluminum light-emitting electrochem. cells)

IT 302790-69-8

RL: DEV (Device component use); USES (Uses)

(BETO-PPV; elec. and electroluminescent properties of indium tin oxide/BTEO-PPV:PUI/aluminum light-emitting electrochem. cells)

IT 7429-90-5, Aluminum, uses 50926-11-9, Indium tin oxide

RL: DEV (Device component use); USES (Uses)

(elec. and electroluminescent properties of indium tin oxide/BTEO-PPV:PUI/aluminum light-emitting electrochem. cells)

IT 25777-97-3, PUI

RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)

(elec. and electroluminescent properties of indium tin oxide/BTEO-PPV:PUI/aluminum light-emitting electrochem. cells)

L7 ANSWER 21 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:118353 HCAPLUS

DN 142:186957

TI Crack-resistant epoxy resin sheets, and their substrates for liquid crystal displays, electroluminescent displays, and solar cells

IN Harada, Tadaaki; Akada, Yuzo; Umehara, Shunji

PA Nitto Denko Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2005036119  | A    | 20050210 | JP 2003-275321  | 20030716 <-- |
| PRAI | JP 2003-275321 |      | 20030716 |                 |              |

AB The sheets comprise terpene-phenol-containing epoxy resins. The sheets show high Tg, light transmittance, and breaking strength.

TI Crack-resistant epoxy resin sheets, and their substrates for liquid crystal displays, electroluminescent displays, and solar cells

PI JP 2005036119 A 20050210

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2005036119 | A    | 20050210 | JP 2003-275321  | 20030716 <-- |

ST epoxy phenol terpene resin sheet liq crystal; epoxycyclohexylmethyl epoxycyclohexanecarboxylate resin methylhexahydrophthalic anhydride crosslinked sheet; acrylic polyurethane polyisocyanurate hard substrate laminate; electroluminescent display substrate solar cell epoxy terpene

IT Polyurethanes, preparation

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyisocyanurate-, hard-coat layer; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Polyisocyanurates

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyurethane-, hard-coat layer; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Electroluminescent devices

(displays; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Luminescent screens

(electroluminescent; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Polyesters, uses

RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) (epoxy, crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Phenolic resins, uses

RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) (epoxy, novolak, terpene-containing, crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Epoxy resins, uses

RL: DEV (Device component use); POF (Polymer in formulation); TEM



(Technical or engineered material use); USES (Uses)  
 (phenolic, novolak, terpene-containing, crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Epoxy resins, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (polyester-, crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Terpenes, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (polymers with phenol, epoxy resins, crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Phenols, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (polymers with terpenes, epoxy resins, crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Terpenes, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (polymers, with phenols, epoxy resins, crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Liquid crystal displays  
 Solar cells  
 (terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT Laminated plastics, uses  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT 108-95-2D, Phenol, polymers with terpenes, glycidyl ethers 25085-98-7, 3,4-Epoxy cyclohexylmethyl-3,4-epoxycyclohexanecarboxylate polymer  
 RL: DEV (Device component use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (crosslinked; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT 25550-51-0, Methylhexahydrophthalic anhydride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (crosslinking agent; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

IT 332415-23-3P  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (hard-coat layer; terpene-containing epoxy resin sheets for substrates of liquid crystal displays, electroluminescent displays, and solar cells)

L7 ANSWER 22 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2005:116506 HCAPLUS  
 DN 142:186955  
 TI Particle-dispersed epoxy resin sheets with good heat resistance and dimensional stability, and their substrates for image display devices and solar cells

IN Sakata, Yoshimasa; Harada, Tadaaki  
PA Nitto Denko Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 20 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2005036120  | A    | 20050210 | JP 2003-275324  | 20030716 <-- |
| PRAI | JP 2003-275324 |      | 20030716 |                 |              |

AB The sheets comprise terpene-phenol-containing epoxy resins and inorg. oxide particles with average particle size 1 nm to 100  $\mu$ m. The sheets show high Tg, light transmittance, and breaking strength.

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-----------------|------|----------|-----------------|--------------|
| PI | JP 2005036120 A |      | 20050210 |                 |              |
| PI | JP 2005036120   | A    | 20050210 | JP 2003-275324  | 20030716 <-- |

IT Electroluminescent devices  
(displays; particle-dispersed terpene-containing epoxy resin sheets for substrates of image display devices and solar cells)

IT Luminescent screens  
(electroluminescent; particle-dispersed terpene-containing epoxy resin sheets for substrates of image display devices and solar cells)

IT 332415-23-3P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(hard-coat layer; particle-dispersed terpene-containing epoxy resin sheets for substrates of image display devices and solar cells)

L7 ANSWER 23 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:116372 HCAPLUS

DN 142:186954

TI Filler-dispersed epoxy resin laminated sheets with good heat resistance and low warpage, and their substrates for image display devices and solar cells

IN Harada, Tadaaki; Sakata, Yoshimasa

PA Nitto Denko Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2005035189  | A    | 20050210 | JP 2003-275325  | 20030716 <-- |
| PRAI | JP 2003-275325 |      | 20030716 |                 |              |

AB The sheets comprise (A) filler-containing terpene phenol epoxy resin layers sandwiched between (B) filler-free epoxy resin layers. The sheets show high Tg, light transmittance, and breaking strength.

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-----------------|------|----------|-----------------|--------------|
| PI | JP 2005035189 A |      | 20050210 |                 |              |
| PI | JP 2005035189   | A    | 20050210 | JP 2003-275325  | 20030716 <-- |

IT Electroluminescent devices  
(displays; filler-dispersed terpene-containing epoxy resin sheets for substrates of image display devices and solar cells)

IT Luminescent screens  
(electroluminescent; filler-dispersed terpene-containing epoxy resin sheets for substrates of image display devices and solar cells)

IT 332415-23-3P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)

(hard-coat layer; filler-dispersed terpene-containing epoxy resin sheets for substrates of image display devices and solar cells)

L7 ANSWER 24 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2004:820056 HCAPLUS  
DN 141:297088  
TI Epoxy resin sheet for substrate of liquid crystal display,  
electroluminescent display, and solar cell  
IN Akada, Yuzo; Harada, Tadaaki; Sakata, Yoshimasa; Umehara, Shunji  
PA Nitto Denko Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|------|--|------|----------|-----------------|--------------|
|      | -----  | ---- | -----    | -----           | -----        |
| PI   | JP 2004277708  | A    | 20041007 | JP 2003-417105  | 20031215 <-- |
| PRAI | JP 2003-54483  | A    | 20030228 |                 |              |
| AB   | The sheet with high strength and toughness contains epoxy resin having dicyclopentadiene framework. Thus, a mixture containing HP 7200L (dicyclopentadiene-type epoxy resin), 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexane carboxylate, methylhexahydrophthalic anhydride, and a catalyst was cast on a hard coat layer-formed belt and cured to give a hard coat-epoxy resin layer laminate, which was released from the belt and post-cured to give a sheet showing balanced glass transition temperature, light transmittance, and breaking strength. |      |          |                 |              |
| TI   | Epoxy resin sheet for substrate of liquid crystal display, electroluminescent display, and solar cell  |      |          |                 |              |
| PI   | JP 2004277708 A  |      | 20041007 |                 |              |
|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|      | -----  | ---- | -----    | -----           | -----        |
| PI   | JP 2004277708  | A    | 20041007 | JP 2003-417105  | 20031215 <-- |
| ST   | liq crystal display substrate dicyclopentadiene epoxy resin sheet; electroluminescent display substrate dicyclopentadiene epoxy resin sheet; solar cell substrate dicyclopentadiene epoxy resin sheet  |      |          |                 |              |
| IT   | Polyurethanes, uses<br>RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)<br>(acrylic, hard coat on sheet; dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)   |      |          |                 |              |
| IT   | Epoxy resins, uses<br>RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)<br>(anhydride-crosslinked; dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)  |      |          |                 |              |
| IT   | Liquid crystal displays<br>Plastic films<br>Solar cells<br>(dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)   |      |          |                 |              |
| IT   | Laminated plastics, uses<br>RL: TEM (Technical or engineered material use); USES (Uses)<br>(dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)   |      |          |                 |              |
| IT   | Electroluminescent devices<br>(displays; dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)  |      |          |                 |              |
| IT   | Luminescent screens<br>(electroluminescent; dicyclopentadiene-type epoxy   |      |          |                 |              |

resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)

IT Coating materials  
(gas-impermeable, on sheet; dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)

IT Coating materials  
(hard, on sheet; dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)

IT 332415-23-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(hard coat on sheet; dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)

IT 756499-19-1P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(sheet; dicyclopentadiene-type epoxy resin-containing sheet for substrate of liquid crystal display, electroluminescent display, and solar cell)

L7 ANSWER 25 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:728187 HCAPLUS

DN 141:372195

TI Fluorescence quenching and excitation transfer between semiconducting and metallic organic layers

AU Asberg, Peter; Nilsson, Peter; Inganaes, Olle

CS Biomolecular and Organic Electronics, IFM, Linkoping University, Linkoping, S-581 83, Swed.

SO Journal of Applied Physics (2004), 96(6), 3140-3147

CODEN: JAPIAU; ISSN: 0021-8979

PB American Institute of Physics

DT Journal

LA English

AB Here the authors present a simple approach to study the interaction of singlet excitons with polarons in conjugated polymers in organic electronic devices. Interlayer quenching consts. KIL of  $1.5\text{M}^{-1}$  between a fluorescent mol. and a doped polymer in a layered sample demonstrates the importance of understanding the quenching of excited states in polymeric devices. A combination of Foerster resonance energy transfer and quenching of photoluminescence between a fluorescent mol. and a conjugated polymer in its semiconducting and metallic states were studied. The polymer is a chiral 3-substituted polythiophene (POWT) and the fluorescent mol. is fluorescein bound to dextran (D-FITC). Bilayer samples with fluorescein on top of the POWT were fabricated and studied with absorption spectroscopy, fluorescence microscopy, and electrochem. doping methods. When POWT is electrochem. dedoped it is possible to enhance the photoluminescence in the polymer layer by excitation transfer from the fluorescein layer. The authors' results demonstrate that PL from the polythiophene disappears rapidly as soon as the layer is doped. As the doping of polymer layer increases the fluorescence from the fluorescein on top of the polymer decreases, due to excitation quenching. Models for excitation transfer and excitation quenching in POWT/FITC bilayer devices were developed. This model predicts a linear relation between the PL from the two mols., in agreement with the authors' exptl. findings. These results are relevant for the development of electroluminescent devices or solar cells based on conjugated polymers.

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Journal of Applied Physics (2004), 96(6), 3140-3147  
CODEN: JAPIAU; ISSN: 0021-8979

AB Here the authors present a simple approach to study the interaction of singlet excitons with polarons in conjugated polymers in organic electronic devices. Interlayer quenching const. KIL of  $1.5 \text{ M}^{-1}$  between a fluorescent mol. and a doped polymer in a layered sample demonstrates the importance of understanding the quenching of excited states in polymeric devices. A combination of Foerster resonance energy transfer and quenching of photoluminescence between a fluorescent mol. and a conjugated polymer in its semiconducting and metallic states were studied. The polymer is a chiral 3-substituted polythiophene (POWT) and the fluorescent mol. is fluorescein bound to dextran (D-FITC). Bilayer samples with fluorescein on top of the POWT were fabricated and studied with absorption spectroscopy, fluorescence microscopy, and electrochem. doping methods. When POWT is electrochem. dedoped it is possible to enhance the photoluminescence in the polymer layer by excitation transfer from the fluorescein layer. The authors' results demonstrate that PL from the polythiophene disappears rapidly as soon as the layer is doped. As the doping of polymer layer increases the fluorescence from the fluorescein on top of the polymer decreases, due to excitation quenching. Models for excitation transfer and excitation quenching in POWT/FITC bilayer devices were developed. This model predicts a linear relation between the PL from the two mols., in agreement with the authors' exptl. findings. These results are relevant for the development of electroluminescent devices or solar cells based on conjugated polymers.

IT Electroluminescent devices

Solar cells

(fluorescence quenching and excitation transfer between semiconducting and metallic organic layers in relation to)

IT 298-81-7D, derivs. 139100-13-3

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(fluorescence quenching and excitation transfer between semiconducting and metallic organic layers)

L7 ANSWER 26 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:538915 HCAPLUS

DN 141:244080

TI Synthesis and characterization of poly(1,4-phenylenevinylene-alt-2,5-thienylenevinylene) derivatives for organic light-emitting diodes

AU Jin, Sung-Ho; Hwang, Chan-Koo; Gal, Yeong-Soon; Park, Dong-Kyu; Cho, Sung-Jin; Shin, Dong-Myung; Lee, Jae-Wook

CS Department of Chemistry Education and Center for Plastic Information System, Pusan National University, Pusan, 609-735, S. Korea

SO European Polymer Journal (2004), 40(8), 1975-1980

CODEN: EUPJAG; ISSN: 0014-3057

PB Elsevier Science B.V.

DT Journal

LA English

AB A new series of alternating copolymers composed of 1,4-phenylenevinylene and 2,5-thienylenevinylene repeating units with various side chain substituents were synthesized via the Heck coupling reaction for use in light-emitting diodes (LEDs). The resulting copolymers were characterized using  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR, DSC, and TGA. These polymers were soluble in common organic solvents and are easily spin-coated onto glass substrates, producing high optical quality thin films without defects. The electro-optical properties of ITO/PEDOT/Polymer/Al devices were studied using UV-VIS, PL and EL spectroscopy. The turn-on voltages of these devices were in the range 4-16 V, with a maximum brightness of about  $2900 \text{ cd/m}^2$  at 12 V.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO European Polymer Journal (2004), 40(8), 1975-1980

CODEN: EUPJAG; ISSN: 0014-3057

ST prepn electroluminescence phenylenevinylene-thienylenevinylene copolymer deriv LED

IT Binding energy

Electroluminescent devices  
Luminescence, electroluminescence

(synthesis and characterization of poly(1,4-phenylenevinylene-alt-2,5-thienylenevinylene) derivs. for organic light-emitting diodes)

IT 749268-92-6P 749268-93-7P 749268-94-8P 749886-40-6P  
749886-41-7P 749886-42-8P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(synthesis and characterization of poly(1,4-phenylenevinylene-alt-2,5-thienylenevinylene) derivs. for organic light-emitting diodes)

L7 ANSWER 27 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:513381 HCAPLUS

DN 141:72366

TI Epoxy-functional silane or siloxane-containing hybrid copolymers

IN Herr, Donald E.; Chaplinsky, Sharon

PA USA

SO U.S. Pat. Appl. Publ., 34 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

|      | PATENT NO.      | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|-----------------|------|----------|--|--------------|
| PI   | US 2004122186   | A1   | 20040624 | US 2002-327353   | 20021220 <-- |
|      | US 7034089      | B2   | 20060425 |  |              |
|      | WO 2004060976   | A1   | 20040722 | WO 2003-US38875  | 20031208 <-- |
|      | W:              |      |          | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW |              |
|      | RW:             |      |          | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR   |              |
|      | AU 2003296306   | A1   | 20040729 | AU 2003-296306   | 20031208 <-- |
|      | EP 1572781      | A1   | 20050914 | EP 2003-814660   | 20031208 <-- |
|      | R:              |      |          | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK   |              |
|      | CN 1747987      | A    | 20060315 | CN 2003-80109778   | 20031208     |
|      | JP 2006511664   | T    | 20060406 | JP 2004-565245   | 20031208     |
| PRAI | US 2002-327353  | A    | 20021220 |  |              |
|      | WO 2003-US38875 | W    | 20031208 |  |              |

AB Versatile synthetic methodol. has been established for the production of a variety of siloxane and silane-containing radial epoxy resins and intermediates. This chemical approach has been exploited to obtain a variety of hybrid organic/inorg. materials that can be described as epoxysiloxane or epoxysilane radial copolymers. The methodol. can be used to access reactive, hydrophobic Si-containing resins with good organic compatibility that are structurally distinct from epoxy-functional siloxanes/silanes known in the prior art. These hybrid radial epoxy resins may be utilized for a variety of adhesive and coating applications including radiation and thermally curable sealants, encapsulants and adhesives.

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

|    |               |      |          |   |              |
|----|---------------|------|----------|---|--------------|
| PI | US 2004122186 | A1   | 20040624 |   |              |
|    | PATENT NO.    | KIND | DATE     | APPLICATION NO.   | DATE         |
| PI | US 2004122186 | A1   | 20040624 | US 2002-327353  | 20021220 <-- |
|    | US 7034089    | B2   | 20060425 |   |              |
|    | WO 2004060976 | A1   | 20040722 | WO 2003-US38875   | 20031208 <-- |
|    | W:            |      |          | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, |              |

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR

AU 2003296306 A1 20040729 AU 2003-296306 20031208 <--  
 EP 1572781 A1 20050914 EP 2003-814660 20031208 <--  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
 CN 1747987 A 20060315 CN 2003-80109778 20031208  
 JP 2006511664 T 20060406 JP 2004-565245 20031208

IT Electroluminescent devices  
 (organic; manufacture of epoxy-functional hybrid copolymers with good compatibility with other resins and their uses in resins)

IT 709676-80-2P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (cationic photo-cured; manufacture of epoxy-functional hybrid copolymers with good compatibility with other resins and their uses in resins)

L7 ANSWER 28 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:458478 HCAPLUS  
 DN 141:157558  
 TI Light-emitting electrochemical cells based on polyimide containing perylene and tri(ethylene oxide) moieties  
 AU Ko, Heung Cho; Lim, Dae Kyun; Kim, Suk-ho; Choi, Woonghyun; Lee, Hoosung  
 CS Department of Chemistry, Sogang University, Seoul, 121-742, S. Korea  
 SO Synthetic Metals (2004), 144(2), 177-181  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 PB Elsevier Science B.V.  
 DT Journal  
 LA English  
 AB A polyimide [P(PDI-TEO)] containing perylene and tri(ethylene oxide) moieties was prepared. In solution and film states, P(PDI-TEO) exhibited electronic transitions similar to those of other perylene-tetracarboxylic diimides. In P(PDI-TEO)-based EL (electroluminescent) devices, light-emitting electrochem. cells (LEC) and LEDs, as the amount of lithium triflate (LiTf) increased in the emitter layer, the luminance reached a maximum of ca. 1.6 cd/m<sup>2</sup> at 1/1 PDI-TEO/LiTf molar ratio and then decreased. Addition of poly(ethylene oxide) to the P(PDI-TEO)/LiTf (1/1) layer resulted in increase of turn-on voltage in current-voltage-luminance curves due to higher IR-drop and in reduction of the maximum luminance due to dilution effects.  
 The LEC based on P(PDI-TEO)/LiTf (1/1) showed much more intensified electroluminescence spectrum ( $\lambda_{\text{max}}$ : 643 nm) than the LED based on P(PDI-TEO) only.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Synthetic Metals (2004), 144(2), 177-181  
 CODEN: SYMEDZ; ISSN: 0379-6779

AB A polyimide [P(PDI-TEO)] containing perylene and tri(ethylene oxide) moieties was prepared. In solution and film states, P(PDI-TEO) exhibited electronic transitions similar to those of other perylene-tetracarboxylic diimides. In P(PDI-TEO)-based EL (electroluminescent) devices, light-emitting electrochem. cells (LEC) and LEDs, as the amount of lithium triflate (LiTf) increased in the emitter layer, the luminance reached a maximum of ca. 1.6 cd/m<sup>2</sup> at 1/1 PDI-TEO/LiTf molar ratio and then decreased. Addition of poly(ethylene oxide) to the P(PDI-TEO)/LiTf (1/1) layer resulted in increase of turn-on voltage in current-voltage-luminance curves due to higher IR-drop and in reduction of the maximum luminance due to dilution effects.  
 The LEC based on P(PDI-TEO)/LiTf (1/1) showed much more intensified

electroluminescence spectrum ( $\lambda_{\text{max}}$ : 643 nm) than the LED based on P(PDI-TEO) only.

- ST perylene ethylene oxide polyimide prepn electronic absorption electroluminescence; light emitting electrochem cell perylene ethylene oxide polyimide emitter
- IT Electroluminescent devices  
(light-emitting diodes; light-emitting electrochem. cells and LEDs based on polyimide containing prepared perylene and tri(ethylene oxide) moieties)
- IT Electrooptical absorption  
Luminescence, electroluminescence  
Photoelectrochemical cells  
(light-emitting electrochem. cells and LEDs based on polyimide containing prepared perylene and tri(ethylene oxide) moieties)
- IT 728865-01-8P 728865-02-9P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(emitter layer; light-emitting electrochem. cells and LEDs based on polyimide containing prepared perylene and tri(ethylene oxide) moieties)

L7 ANSWER 29 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:427793 HCAPLUS

DN 140:431395

TI Photosensitive polymers and their negative photoimaging compositions with good ink repellency and alkali develop ability

IN Ishiseki, Kenji; Takahashi, Hideyuki

PA Asahi Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2004149699  | A    | 20040527 | JP 2002-317808  | 20021031 <-- |
| PRAI | JP 2002-317808 |      | 20021031 |                 |              |

AB The invention relates to a polymer manufactured by reacting (A) copolymers comprising polymer units of monomers having dimethylsiloxane groups and other polymer units of monomers having  $\geq 1$  carboxyl groups and (B) compds. having ethylenically unsatd. double bonds and groups reactive to the copolymers. The compns. are useful for ribs of color filters or electroluminescent displays.

PI JP 2004149699 A 20040527

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2004149699 | A    | 20040527 | JP 2002-317808  | 20021031 <-- |

AB The invention relates to a polymer manufactured by reacting (A) copolymers comprising polymer units of monomers having dimethylsiloxane groups and other polymer units of monomers having  $\geq 1$  carboxyl groups and (B) compds. having ethylenically unsatd. double bonds and groups reactive to the copolymers. The compns. are useful for ribs of color filters or electroluminescent displays.

IT 691009-39-9P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic polysiloxanes for neg. photoimaging compns. with good ink repellency and alkali develop ability)

L7 ANSWER 30 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:354444 HCAPLUS

DN 140:365668

TI Negative-working photoresist composition and its application to form electronic part and insulator layer in organic electroluminescent



display  
 IN Suwa, Atsushi; Tomikawa, Masao  
 PA Toray Industries, Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 31 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2004133435  | A    | 20040430 | JP 2003-319334  | 20030911 <-- |
| PRAI | JP 2002-270137 | A    | 20020917 |                 |              |

AB The title neg.-working photoresist composition comprises (a) a polymer having a structural repeating unit of  $-\text{[CO-R1(OR4)p(COOR3)m-CONH-R2(OR5)q-NH]n-}$  {R1 = 2- to 8-valent  $\text{C}\geq 2$ -organic group; R2 = 2- to 6-valent  $\text{C}\geq 2$ -organic group; R3 = H, Cl-20-organic group; n = 10-100,000; m = 0-2; p, q = 0-4; R4, R5 = H, photocrosslinking group}, (b) a phenolic low mol. weight compound, (c) a polymerizable low mol. weight compound, and (d) a photopolymer. initiator.

TI Negative-working photoresist composition and its application to form electronic part and insulator layer in organic electroluminescent display

| PI | JP 2004133435 A | 20040430 |          |                 |              |
|----|-----------------|----------|----------|-----------------|--------------|
|    | PATENT NO.      | KIND     | DATE     | APPLICATION NO. | DATE         |
| PI | JP 2004133435   | A        | 20040430 | JP 2003-319334  | 20030911 <-- |

ST neg working photoresist compn electronic part insulator  
 electroluminescent display

IT Electroluminescent devices  
 (displays; neg.-working photoresist composition and its application to form electronic part and insulator layer in organic electroluminescent display)

IT Luminescent screens  
 (electroluminescent; neg.-working photoresist composition and its application to form electronic part and insulator layer in organic electroluminescent display)

IT Dielectric films  
 Electronic device fabrication  
 Negative photoresists  
 (neg.-working photoresist composition and its application to form electronic part and insulator layer in organic electroluminescent display)

IT Photoimaging materials  
 (photopolymerizable; neg.-working photoresist composition and its application to form electronic part and insulator layer in organic electroluminescent display)

IT 236095-20-8P 264604-36-6P 317822-55-2P 680227-88-7P  
 682750-60-3P 682750-62-5P 682750-64-7P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyimide precursor in neg.-working photoresist composition)

L7 ANSWER 31 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:336598 HCAPLUS  
 DN 141:38931

TI A novel hyperbranched polyester acrylate used for microfabrications  
 AU Kou, Huiguang; Asif, Anila; Shi, Wenfang; Jiang, Zhongwei; Huang, Wenhao  
 CS Department of Polymer Science and Engineering, University of Science and Technology of China, Hefei, 230026, Peop. Rep. China  
 SO Polymers for Advanced Technologies (2004), 15(4), 192-196  
 CODEN: PADTE5; ISSN: 1042-7147  
 PB John Wiley & Sons Ltd.  
 DT Journal  
 LA English

AB A novel hyperbranched polyester acrylate (HPEA) was synthesized based upon ethylenediamine tetraacetic acid as a "core" mol., 5-hydroxyisophthalic acid as an AB2 monomer, and 2-hydroxyethyl acrylate as an endcapping reagent. The obtained oligomer has an unsatn. concentration of 4.10 mmolC=C

g-1

measured by NMR and a wide mol. weight distribution of 1.64 measured by gel permeation chromatog. The two-photon absorption (TPA) photopolymerization of HPEA under the exposure of a Ti: sapphire femtosecond laser with a wavelength of 800 nm was investigated through laser exposure dose-dependent spatial resolutions of its resins. The TPA photopolymerization thresholds at the range 1.6-4.3 + 107 mJ cm<sup>-2</sup>, and exposure dose windows at the range 3.4-4.3 for three formulations were determined. A spatial resolution of 0.85 µm was obtained through the TPA photopolymerization of the formulation containing 1 wt% photoinitiator and 0.3 wt% photoinhibitor. A diffraction grating and real three-dimensional coupled gear wheel created by TPA photopolymerization were described to demonstrate the unique capability of HPEA in microfabrications.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Polymers for Advanced Technologies (2004), 15(4), 192-196  
CODEN: PADTE5; ISSN: 1042-7147

IT Electroluminescent devices  
(displays; hyperbranched polyester acrylate used for microfabrications)

IT Luminescent screens  
(electroluminescent; hyperbranched polyester acrylate used for microfabrications)

IT 704882-97-3P, Ethylenediamine tetraacetic acid-1,6-hexanediol diacrylate-5-hydroxyisophthalic acid copolymer  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(1,6-Hexanediol diacrylate; hyperbranched polyester acrylate used for microfabrications)

IT 704882-96-2DP, Ethylenediamine tetraacetic acid-5-hydroxyisophthalic acid copolymer, acid chloride, reaction with 2-hydroxyethyl acrylate  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of hyperbranched polyester acrylate used for microfabrications)

L7 ANSWER 32 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:101202 HCAPLUS

DN 140:147010

TI Photopolymerizable compositions and uses thereof

IN Imai, Masao; Nakamura, Mitsuo; Naruse, Hiroshi; Kogo, Osamu; Enna, Masahiro; Otsuji, Atsuo

PA Mitsui Chemicals, Inc., Japan

SO PCT Int. Appl., 40 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

|    | PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE         |
|----|---------------|--|----------|-----------------|--------------|
| PI | WO 2004011511 | A1   | 20040205 | WO 2003-JP9065  | 20030717 <-- |
|    | W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |          |                 |              |
|    | RW:           | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |              |

AU 2003281687 A1 20040216 AU 2003-281687 20030717 <--  
JP 2004128468 A 20040422 JP 2003-198228 20030717 <--  
EP 1548039 A1 20050629 EP 2003-741440 20030717 <--  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
CN 1671758 A 20050921 CN 2003-818271 20030717 <--  
US 2006003261 A1 20060105 US 2005-522532 20050127  
US 7307107 B2 20071211  
PRAI JP 2002-219573 A 20020729  
JP 2003-119417 A 20030424  
WO 2003-JP9065 W 20030717  
AB Photopolymerizable compns., which can be polymerized in a short period of time and are useful for optical applications, comprise a photopolymer. initiator and a polymerizable compound component, characterized in that the polymerizable compound component includes (a) a bifunctional (meth)acrylic (thio)ester containing a sulfur atom in the mol. and (b) a bifunctional (meth)acrylic ester having a urethane linkage and/or a (meth)acrylate H2C:C(R1)Y1OC6H3(R3)mX1C6H3(R4)nOY2COCR2:CH2 [R1, R2 = H, Me; R3, R4 = alkyl, aralkyl, aryl, halo; m, n = 0-2; X1 = C1-3 alkylidene; and Y1, Y2 = polyoxyalkylene with the proviso that at least one of Y1 and Y2 is hydroxylated poly(oxyalkylene)].  
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT  
PI WO 2004011511 A1 20040205  
PATENT NO. KIND DATE APPLICATION NO. DATE  
PI WO 2004011511 A1 20040205 WO 2003-JP9065 20030717 <--  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
AU 2003281687 A1 20040216 AU 2003-281687 20030717 <--  
JP 2004128468 A 20040422 JP 2003-198228 20030717 <--  
EP 1548039 A1 20050629 EP 2003-741440 20030717 <--  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
CN 1671758 A 20050921 CN 2003-818271 20030717 <--  
US 2006003261 A1 20060105 US 2005-522532 20050127  
US 7307107 B2 20071211  
IT Electroluminescent devices  
Lenses  
Transparent materials  
(manufacture of photopolymerizable compns. and uses thereof)  
IT 653577-57-2P 653577-59-4P 653577-61-8P  
653577-63-0P 653577-64-1P 653577-66-3P  
653577-67-4P 653577-71-0P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(manufacture of photopolymerizable compns. and uses thereof)  
L7 ANSWER 33 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:969977 HCAPLUS  
DN 140:294072  
TI Demonstration of assembly failure of light-emitting electrochemical cells  
AU Wang, Hsing-lung; Wen, Ten-chin; Yang, Chien-hsin  
CS Department of Chemical Engineering, National Cheng Kung University,  
Tainan, 701, Taiwan

SO Journal of the Chinese Institute of Chemical Engineers (2003),  
34(5), 581-586

CODEN: JCICAP; ISSN: 0368-1653

PB Chinese Institute of Chemical Engineers

DT Journal

LA English

AB Light-emitting electrochem. cells (LECs) were fabricated by employing thin films of the blend poly(p-phenylene vinylene) (PPV) and waterborne polyurethane ionomer (WPUI) neutralized with LiOH, sandwiched between an anode (In Sn oxide coated glass, ITO) and a cathode (Al). The conjugated polymer is p-doped and n-doped on the opposite side of the polymer layer when the external bias is applied, and a light-emitting p-n junction is in-situ formed in this assembly. The counterions are provided by WPUI to make the matrix ionically conducting, which is necessary for doping. Green light emission was observed in this study with a onset voltage of .apprx.2.4 V. The LEC characteristics of normal LEC devices and those that had experienced assembly failure were studied using cyclic voltammetry. The results of this study would be useful to the new researchers interested in fabricating and characterizing LECs.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Journal of the Chinese Institute of Chemical Engineers (2003),  
34(5), 581-586

CODEN: JCICAP; ISSN: 0368-1653

IT Electroluminescent devices

(electrochem.; demonstration of assembly failure of light-emitting electrochem. cells)

IT 26009-24-5, Poly(p-phenylene vinylene) 110866-77-8 675103-40-9

RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(demonstration of assembly failure of light-emitting electrochem. cells)

L7 ANSWER 34 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:951094 HCAPLUS

DN 140:6000

TI Resin sheets with good heat and crack resistance for liquid-crystal cell substrates

IN Akada, Yuuzou; Umehara, Toshiyuki; Yagi, Yoshinobu; Harada, Tadaaki; Sakata, Yoshimasa; Yoshitake, Hidetoshi

PA Nitto Denko Corporation, Japan

SO PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | WO 2003099912  | A1   | 20031204 | WO 2003-JP6372  | 20030522 <-- |
|      | W: CN, KR, US  |      |          |                 |              |
|      | JP 2004051960  | A    | 20040219 | JP 2003-143781  | 20030521 <-- |
|      | CN 1656156     | A    | 20050817 | CN 2003-812251  | 20030522 <-- |
|      | US 2005129877  | A1   | 20050616 | US 2004-512823  | 20041028 <-- |
|      | US 7259803     | B2   | 20070821 |                 |              |
| PRAI | JP 2002-151697 | A    | 20020527 |                 |              |
|      | WO 2003-JP6372 | W    | 20030522 |                 |              |

AB Title sheets with haze  $\leq 10\%$ , light transmittance  $\geq 88\%$ , phase difference in the plane  $\leq 2$  nm, phase difference in the thickness direction  $\leq 40$  nm, and surface roughness  $\leq 2$   $\mu$ m are prepared by immersing glass fiber fabrics in liquid epoxy resins and curing the epoxy resins. A glass fiber fabric was immersed in an epoxy resin composition comprising 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate 27, Araldite AER 250 73, methylhexahydrophthalic anhydride 88, and

tetrabutylphosphonium o,o-diethylphosphorodithioate 0.9 parts to give a prepreg, which was placed on an acrylic urethane-coated glass plate, a glass plated was placed thereon, heated, heat-treated, and removed glass plates to give a laminate with linear expansion coefficient  $1.8 \times 10^{-5}/^{\circ}\text{C}$ , light transmittance 90%, phase difference in the plane 1.5 nm, phase difference in the thickness direction 42 nm, haze 8%, surface roughness 0.7  $\mu\text{m}$ , and good scratch resistance.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

| PI | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|----|--|------|----------|-----------------|--------------|
| PI | WO 2003099912  | A1   | 20031204 | WO 2003-JP6372  | 20030522 <-- |
|    | W: CN, KR, US  |      |          |                 |              |
|    | JP 2004051960  | A    | 20040219 | JP 2003-143781  | 20030521 <-- |
|    | CN 1656156   | A    | 20050817 | CN 2003-812251  | 20030522 <-- |
|    | US 2005129877  | A1   | 20050616 | US 2004-512823  | 20041028 <-- |
|    | US 7259803   | B2   | 20070821 |                 |              |
| IT | Electroluminescent devices<br>(displays, printed circuit boards; resin sheets with good heat and crack resistance for liquid-crystal cell substrates)  |      |          |                 |              |
| IT | Luminescent screens<br>(electroluminescent, printed circuit boards; resin sheets with good heat and crack resistance for liquid-crystal cell substrates)   |      |          |                 |              |
| IT | 332415-23-3P<br>RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)<br>(hard coat; resin sheets with good heat and crack resistance for liquid-crystal cell substrates) |      |          |                 |              |

L7 ANSWER 35 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:875359 HCAPLUS  
DN 139:351572  
TI Fluorinated optical material comprising fluoropolymer having functional group capable of forming complex with rare earth metal ion useful for optical communication  
IN Araki, Takayuki; Tanaka, Yoshito; Andou, Yoshito; Komatsu, Yuza  
PA Daikin Industries, Ltd., Japan  
SO PCT Int. Appl., 91 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

| PI   | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|------|--|------|----------|-----------------|--------------|
| PI   | WO 2003091343  | A1   | 20031106 | WO 2003-JP4600  | 20030411 <-- |
|      | W: CN, JP, KR, US  |      |          |                 |              |
|      | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR   |      |          |                 |              |
|      | EP 1498459   | A1   | 20050119 | EP 2003-747214  | 20030411 <-- |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK  |      |          |                 |              |
|      | US 2005084231  | A1   | 20050421 | US 2004-970650  | 20041022 <-- |
| PRAI | JP 2002-123785   | A    | 20020425 |                 |              |
|      | WO 2003-JP4600   | W    | 20030411 |                 |              |
| AB   | The fluoropolymer having a functional group capable of forming a complex with rare earth metal ions has $\geq 2$ hetero atoms in structural units of side chains, and with respect to the fluoropolymer the maximum value of absorption coefficient in the 1290-1320 nm, 1530-1570 nm and 600-900 nm wavelength band regions is not greater than 1 $\text{cm}^{-1}$ . The rare earth metal ion is $\geq 1$ ion selected from erbium, thulium, praseodymium, holmium, neodymium, europium, dysprosium, samarium, cerium, and terbium ion. Thus, |      |          |                 |              |

14.8 g methyltrifluoromethylsulfone and 45 g 9H,9H-perfluoro-2,5-dimethyl-3,6-dioxa-8-nonenoic acid ether ester were reacted to give 34.8 g 9H,9H-perfluoro-2,5-dimethyl-3,6-dioxa-8-nonenyl 1-(trifluoromethylsulfonyl)methyl ketone, 10.0 g of which was polymerized at 30° for 5 h to give a fluoropolymer with number average mol. weight 5200, weight average mol. weight 6500, fluoro content 55%, absorption coefficient 0.015 at 650 nm, 0.032 at 1310 nm, 0.312 cm<sup>-1</sup> at 1550 nm, refractive index 1.40, and thermal decomposition temperature 258°, 2.0 g the resulting fluoropolymer and 0.62 g hydrated europium acetate were mixed in water and methanol mixture to give an europium fluoropolymer complex with europium content 10%, fluorescent emission at 615 nm when excited at 394 nm, and refractive index 1.42.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

| PI | PATENT NO.   | KIND         | DATE         | APPLICATION NO. | DATE         |
|----|--|--------------|--------------|-----------------|--------------|
| PI | WO 2003091343  | A1           | 20031106     | WO 2003-JP4600  | 20030411 <-- |
|    | W: CN, JP, KR, US  |              |              |                 |              |
|    | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR   |              |              |                 |              |
|    | EP 1498459   | A1           | 20050119     | EP 2003-747214  | 20030411 <-- |
|    | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK  |              |              |                 |              |
|    | US 2005084231  | A1           | 20050421     | US 2004-970650  | 20041022 <-- |
| IT | Electroluminescent devices   |              |              |                 |              |
|    | Optical amplifiers   |              |              |                 |              |
|    | Optical materials  |              |              |                 |              |
|    | (preparation of rare earth metal fluoropolymer complexes useful for optical communication)   |              |              |                 |              |
| IT | 618387-99-8P   | 618388-00-4P | 618388-01-5P |                 |              |
|    | RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)   |              |              |                 |              |
|    | (intermediate; preparation of rare earth metal fluoropolymer complexes useful for optical communication)   |              |              |                 |              |
| IT | 7440-52-0DP, Erbium, complex with fluoropolymer 7440-53-1DP, Europium, complex with fluoropolymer 618387-99-8DP, complex with europium and erbium 618388-00-4DP, complex with europium and erbium 618388-01-5DP, complex with europium |              |              |                 |              |
|    | RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  |              |              |                 |              |
|    | (preparation of rare earth metal fluoropolymer complexes useful for optical communication)   |              |              |                 |              |

L7 ANSWER 36 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:818669 HCAPLUS  
DN 139:330098  
TI Hole transport polymers and devices made with such polymers  
IN Jaycox, Gary Delmar; Periyasamy, Mookkan; Yu, Gang  
PA E. I. Du Pont de Nemours & Co., USA  
SO PCT Int. Appl., 31 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

| PI | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|----|--|------|----------|-----------------|--------------|
| PI | WO 2003086026  | A2   | 20031016 | WO 2003-US9851  | 20030401 <-- |
|    | WO 2003086026  | A3   | 20031204 |                 |              |
|    | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, |      |          |                 |              |

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

|   |   |          |                 |                      |              |
|---|---|----------|-----------------|----------------------|--------------|
| US 2003225234   | A1  | 20031204 | US 2003-396181  | 20030325 <--         |              |
| US 7205366  | B2  | 20070417 |                 |                      |              |
| CA 2479550  | A1  | 20031016 | CA 2003-2479550 | 20030401 <--         |              |
| AU 2003222138   | A1  | 20031020 | AU 2003-222138  | 20030401 <--         |              |
| EP 1492855  | A2  | 20050105 | EP 2003-718127  | 20030401 <--         |              |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK |   |          |                 |                      |              |
| JP 2005521783   | T   | 20050721 | JP 2003-583066  | 20030401 <--         |              |
| CN 1646660  | A   | 20050727 | CN 2003-807943  | 20030401 <--         |              |
| US 2005124732   | A1  | 20050609 | US 2005-35576   | 20050114 <--         |              |
| US 2005131185   | A1  | 20050616 | US 2005-35577   | 20050114 <--         |              |
| PRAI US 2002-369663P  | P   | 20020402 |                 |                      |              |
| US 2003-396181  | A3  | 20030325 |                 |                      |              |
| WO 2003-US9851  | W   | 20030401 |                 |                      |              |
| AB  | A hole transport polymer is described comprising a polymeric backbone (e.g., polyacrylates, polymethacrylates, polyaramides, polystyrenes, polyarylenes, polyesters, polyvinylenes, polyvinyl ethers and polyvinyl esters) having linked to a plurality of substituents, the substituents comprising at least one fused aromatic ring group (e.g., naphthyl, anthracyl, phenanthryl, phenalenyl, fluorenyl, pyrenyl, tetracenyl and pentacenyl groups), wherein the polymer does not contain groups selected from triarylamines groups and carbazole groups. An organic electronic device is also described comprising an active layer between an anode and a cathode, wherein the device further comprises at least one hole-transporting polymer described. |          |                 |                      |              |
| PI  | WO 2003086026 A2 20031016   |          |                 |                      |              |
|   | PATENT NO.  | KIND     | DATE            | APPLICATION NO. DATE |              |
| PI  | WO 2003086026   | A2       | 20031016        | WO 2003-US9851       | 20030401 <-- |
|   | WO 2003086026   | A3       | 20031204        |                      |              |
|   | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW   |          |                 |                      |              |
|   | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  |          |                 |                      |              |
|   | US 2003225234   | A1       | 20031204        | US 2003-396181       | 20030325 <-- |
|   | US 7205366  | B2       | 20070417        |                      |              |
|   | CA 2479550  | A1       | 20031016        | CA 2003-2479550      | 20030401 <-- |
|   | AU 2003222138   | A1       | 20031020        | AU 2003-222138       | 20030401 <-- |
|   | EP 1492855  | A2       | 20050105        | EP 2003-718127       | 20030401 <-- |
|   | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK   |          |                 |                      |              |
|   | JP 2005521783   | T        | 20050721        | JP 2003-583066       | 20030401 <-- |
|   | CN 1646660  | A        | 20050727        | CN 2003-807943       | 20030401 <-- |
|   | US 2005124732   | A1       | 20050609        | US 2005-35576        | 20050114 <-- |
|   | US 2005131185   | A1       | 20050616        | US 2005-35577        | 20050114 <-- |
| IT  | Electroluminescent devices  |          |                 |                      |              |
|   | Hole transport  |          |                 |                      |              |
|   | (hole transport polymers and devices made with such polymers)   |          |                 |                      |              |
| IT  | 26355-01-1P, Methyl methacrylate-2-hydroxyethyl methacrylate copolymer  |          |                 |                      |              |

40008-96-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(precursor for hole transport polymer; hole transport polymers and devices made with such polymers)

L7 ANSWER 37 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:777894 HCAPLUS

DN 139:278084

TI Conductive polymer-based coating material for layers in electronic devices

IN McDonald, William F.; Koren, Amy B.; Dourado, Sunil K.; Dulebohn, Joel I.; Hanchar, Robert J.

PA Michigan Biotechnology Institute, USA

SO PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

|      | PATENT NO.      | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|-----------------|------|----------|--|--------------|
| PI   | WO 2003080730   | A1   | 20031002 | WO 2003-US8227   | 20030319 <-- |
|      | W:              |      |          | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW |              |
|      | RW:             |      |          | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |              |
|      | AU 2003220363   | A1   | 20031008 | AU 2003-220363   | 20030319 <-- |
|      | US 2004051083   | A1   | 20040318 | US 2003-392347   | 20030319 <-- |
|      | US 7204940      | B2   | 20070417 |  |              |
| PRAI | US 2002-366100P | P    | 20020320 |  |              |
|      | WO 2003-US8227  | W    | 20030319 |  |              |

AB Conductive coatings comprise (i) a polymeric composition including a polymer having side chains along a backbone forming the polymer, where  $\geq 2$  of the side chains are substituted with a heteroatom selected from O, N, S, and P and combinations of these and (ii) many metal species distributed within the polymer. At least a portion of the heteroatoms may form part of a chelation complex with some or all of the metal species. The conductive coatings may be useful as thin film conducting or semi-conducting layers in organic electronic devices such as organic electroluminescent devices and organic thin film transistors. A coating solution (iso-PROH) containing polyamide from maleic acid monoethyl ester-pentaethylenehexamine-tetradecylamine reaction mixture, silver pentafluoropropionate, glutaraldehyde, Et<sub>3</sub>N, surfactant, hydroxymethyl phosphine was applied to silane surface-modified polydimethylsiloxane substrate, showing dark resistivity lower than ITO films.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

|    |               |      |          |  |              |
|----|---------------|------|----------|--|--------------|
| PI | WO 2003080730 | A1   | 20031002 | WO 2003-US8227   | 20030319 <-- |
|    | PATENT NO.    | KIND | DATE     | APPLICATION NO.  | DATE         |
| PI | WO 2003080730 | A1   | 20031002 | WO 2003-US8227   | 20030319 <-- |
|    | W:            |      |          | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW |              |
|    | RW:           |      |          | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  |              |



KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003220363 A1 20031008 AU 2003-220363 20030319 <--  
US 2004051083 A1 20040318 US 2003-392347 20030319 <--  
US 7204940 B2 20070417

AB Conductive coatings comprise (i) a polymeric composition including a polymer having side chains along a backbone forming the polymer, where  $\geq 2$  of the side chains are substituted with a heteroatom selected from O, N, S, and P and combinations of these and (ii) many metal species distributed within the polymer. At least a portion of the heteroatoms may form part of a chelation complex with some or all of the metal species. The conductive coatings may be useful as thin film conducting or semi-conducting layers in organic electronic devices such as organic electroluminescent devices and organic thin film transistors. A coating solution (iso-PrOH) containing polyamide from maleic acid monoethyl ester-pentaethylenehexamine-tetradecylamine reaction mixture, silver pentafluoropropionate, glutaraldehyde, Et3N, surfactant, hydroxymethyl phosphine was applied to silane surface-modified polydimethylsiloxane substrate, showing dark resistivity lower than ITO films.

IT Electrodes

Electroluminescent devices

Thin film transistors

(conductive polyamide coating layer for use in electronic devices)

IT 434314-56-4P, Maleic acid monoethyl ester-pentaethylenehexamine-tetradecylamine copolymer

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(conductive polyamide coating layer for use in electronic devices)

IT 607354-76-7P, Glutaraldehyde-monoethyl maleate-pentaethylenehexamine-tetradecylamine-tris(hydroxymethyl)phosphine copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(crosslinked; conductive polyamide coating layer for use in electronic devices)

L7 ANSWER 38 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:723555 HCAPLUS

DN 139:237842

TI Filler-dispersed polymer sheets and their uses

IN Sakata, Yoshimasa; Umehara, Satoshi

PA Nitto Denko Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 2003260768 | A    | 20030916 | JP 2002-63534   | 20020308 <-- |
|      | JP 3955221    | B2   | 20070808 |                 |              |
| PRAI | JP 2002-63534 |      | 20020308 |                 |              |

AB The sheets contain laminates having filler-containing epoxy resin layers between 2 filler-free epoxy resin layers. Substrates of liquid-crystal displays, electroluminescent displays, and solar cells using the sheets are also claimed. The sheets show low linear thermal expansion coefficient and no curling and warpage.

PI JP 2003260768 A 20030916

|  | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------------|------|------|-----------------|------|
|--|------------|------|------|-----------------|------|

|    |               |    |          |               |              |
|----|---------------|----|----------|---------------|--------------|
| PI | JP 2003260768 | A  | 20030916 | JP 2002-63534 | 20020308 <-- |
|    | JP 3955221    | B2 | 20070808 |               |              |

AB The sheets contain laminates having filler-containing epoxy resin layers between 2 filler-free epoxy resin layers. Substrates of liquid-crystal displays, electroluminescent displays, and solar cells using the sheets are also claimed. The sheets show low linear thermal expansion coefficient and no curling and warpage.

ST filler dispersed epoxy resin LCD substrate; electroluminescent display substrate filler dispersed epoxy resin; solar cell substrate filler dispersed epoxy resin

IT Electroluminescent devices  
(displays; curling-free filler-dispersed epoxy resin sheets for substrates of displays and solar cells)

IT Luminescent screens  
(electroluminescent; curling-free filler-dispersed epoxy resin sheets for substrates of displays and solar cells)

IT 332415-23-3P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(hard-coat layers; curling-free filler-dispersed epoxy resin sheets for substrates of displays and solar cells)

L7 ANSWER 39 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:646642 HCAPLUS

DN 139:181146

TI Transparent sheets with good surface smoothness and their manufacture

IN Kuroda, Hiroyuki; Mori, Takafumi; Kawasaki, Noboru; Shioji, Masahiro

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 2003231140 | A    | 20030819 | JP 2002-30568   | 20020207 <-- |
| PRAI | JP 2002-30568 |      | 20020207 |                 |              |

AB Title sheets are manufactured by applying photocurable polymer compns. at thickness 0.05-3 mm on supports, irradiating with UV light in the presence O, bonding transparent plastic films on the resulting semicured sheets, and irradiating with UV light to cure perfectly. The sheets are useful for electronic paper, touch panels, and organic electroluminescent devices. Thus, N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate, tris(2-acryloyloxyethyl) isocyanurate, and benzyl di-Me ketal were applied on a stainless steel belt, irradiated with UV light, bonded with a PET film, and irradiated with UV light to give a tack-free sheet with surface roughness 30 nm at the stainless steel sides and 160 nm at the PET sides by removal of the PET film and the steel belt.

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE |
|----|-----------------|------|----------|-----------------|------|
| PI | JP 2003231140 A |      | 20030819 |                 |      |

|    |               |   |          |               |              |
|----|---------------|---|----------|---------------|--------------|
| PI | JP 2003231140 | A | 20030819 | JP 2002-30568 | 20020207 <-- |
|----|---------------|---|----------|---------------|--------------|

AB Title sheets are manufactured by applying photocurable polymer compns. at thickness 0.05-3 mm on supports, irradiating with UV light in the presence O, bonding transparent plastic films on the resulting semicured sheets, and irradiating with UV light to cure perfectly. The sheets are useful for electronic paper, touch panels, and organic electroluminescent devices. Thus, N-(3-isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate, tris(2-acryloyloxyethyl) isocyanurate, and benzyl di-Me ketal were applied on a stainless steel belt, irradiated with UV light, bonded with a PET film, and irradiated with UV light to give a tack-free sheet with surface roughness 30 nm at the stainless steel sides and 160 nm at the PET sides by removal of the PET film and the steel belt.

IT 361552-89-8P, N-(3-Isopropenyl- $\alpha,\alpha$ -dimethylbenzyl)-2-methacryloyloxyethyl carbamate-tris(2-acryloyloxyethyl) isocyanurate

copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manufacture of transparent sheets with good surface smoothness by UV curing in the presence of oxygen)

L7 ANSWER 40 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:609916 HCAPLUS

DN 139:171082

TI Polymers having attached luminescent metal complexes and devices made with such polymers

IN Fryd, Michael; Grushin, Vladimir; Herron, Norman; Periyasamy, Mookkan; Petrov, Viacheslav A.; Radu, Nora Sabina

PA E. I. Du Pont De Nemours and Company, USA

SO U.S. Pat. Appl. Publ., 23 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

|      | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE         |
|------|-----------------|------|----------|-----------------|--------------|
| PI   | US 2003148142   | A1   | 20030807 | US 2001-974113  | 20011009 <-- |
|      | US 6869693      | B2   | 20050322 |                 |              |
|      | US 2005158581   | A1   | 20050721 | US 2004-12425   | 20041214 <-- |
|      | US 7060372      | B2   | 20060613 |                 |              |
| PRAI | US 2000-238974P | P    | 20001010 |                 |              |
|      | US 2001-974113  | A3   | 20011009 |                 |              |

AB Organic electronic devices are described which comprise an emitting layer which comprises  $\geq 1$  functionalized polymer having a plurality of first-type functional groups, at least a portion of the functional groups being coordinated to  $\geq 1$  metal or metal-containing complex, or in which the groups have a charge and are associated with  $\geq 1$  metal complex having an opposite charge. The emitting layers may also include organic charge transport materials. Selected polymer-metal complexes and salts are also described.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

|    |  |      |          |                 |              |
|----|--|------|----------|-----------------|--------------|
| PI | US 2003148142  | A1   | 20030807 |                 |              |
|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
| PI | US 2003148142  | A1   | 20030807 | US 2001-974113  | 20011009 <-- |
|    | US 6869693   | B2   | 20050322 |                 |              |
|    | US 2005158581  | A1   | 20050721 | US 2004-12425   | 20041214 <-- |
|    | US 7060372   | B2   | 20060613 |                 |              |
| ST | metal complex polymer salt electroluminescent device; metal polymer complex electroluminescent device  |      |          |                 |              |
| IT | Luminescent substances<br>(electroluminescent; metal-polymer complexes and salts and devices employing them)   |      |          |                 |              |
| IT | Electroluminescent devices<br>(metal-polymer complexes and salts and devices employing them)   |      |          |                 |              |
| IT | 14054-87-6DP, reaction products with polymers 14592-81-5DP, reaction products with polymers 26284-14-0DP, reaction products with metal compds. 26355-01-1DP, 2-Hydroxyethyl methacrylate-methyl methacrylate copolymer, reaction products with metal compds. 56315-94-7DP, 2-Hydroxyethyl methacrylate-isobutyl methacrylate copolymer, reaction products with metal compds. 66028-15-7DP, 2-(Dimethylamino)ethyl methacrylate-Isobutylmethacrylate copolymer, reaction products with metal compds. 72460-28-7DP, 4,4'-Bis(chlorocarbonyl)-2,2'-bipyridine, reaction products with polymers and metal compds. 190370-38-8DP, reaction products with polymers 387859-66-7DP, reaction products with polymers 412032-55-4DP, reaction products with electron-transporting compds. and metal compds. 412032-56-5DP, reaction products with polymers and metal |      |          |                 |              |

compds. 412032-57-6DP, reaction products with electron-transporting  
 compds. and metal compds. 412032-58-7DP, reaction products with metal  
 compds. 412032-59-8DP, reaction products with metal compds.  
 412032-60-1DP, reaction products with metal compds.  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)

(metal-polymer complexes and salts and devices employing them)  
 IT 37295-36-6P 66028-15-7P, 2-(Dimethylamino)ethyl  
 methacrylate-Isobutylmethacrylate copolymer 103595-82-0P 190370-38-8P  
 370878-58-3P 387859-66-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (metal-polymer complexes and salts and devices employing them)

L7 ANSWER 41 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:582569 HCAPLUS

DN 139:134292

TI Composite compositions useful for transparent moldings and their  
 crosslinked products

IN Takeuchi, Takeshi; Shimobe, Yasuo; Shibahara, Sumio

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 2003213067 | A    | 20030730 | JP 2002-18134   | 20020128 <-- |
|      | JP 4008246    | B2   | 20071114 |                 |              |
| PRAI | JP 2002-18134 |      | 20020128 |                 |              |

AB The compns. contain (A) multifunctional (meth)acrylate compds. having  
 alicyclic structure and (B) silica microparticles having average diameter of  
 1-100 nm and are useful for LCD devices, color filter panels, organic  
 electroluminescent display panels, etc. with good heat resistance  
 and low linear expansion. Thus, mixing dicyclopentadiene diacrylate 120  
 with Snowtex IPA-ST (30% silica dispersion in i-PrOH) 400 while  
 devolatilizing in vacuo at 45°, adding Irgacure 184  
 (photoinitiator) 0.6 and N,N-dimethylaminoethyl acrylate 0.1 g and  
 devolatilizing gave a composite composition which was molded between 2 glass  
 panels, irradiated with UV light, and heated in a vacuum oven at  
 100° for 3 h and at 275° for 3 h to give a sheet with  
 thickness 395 µm, average linear expansion coefficient 47, good solvent  
 resistance, storage modulus 5.7x10<sup>9</sup> and 2.0x10<sup>9</sup> Pa at 30° and at  
 250°, resp., tanδ fluctuation 0.018, 500-nm light  
 transmission 89%, retardation value <3 and no warpage.

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-----------------|------|----------|-----------------|--------------|
| PI | JP 2003213067 A |      | 20030730 |                 |              |
|    | JP 2003213067   | A    | 20030730 | JP 2002-18134   | 20020128 <-- |
|    | JP 4008246      | B2   | 20071114 |                 |              |

AB The compns. contain (A) multifunctional (meth)acrylate compds. having  
 alicyclic structure and (B) silica microparticles having average diameter of  
 1-100 nm and are useful for LCD devices, color filter panels, organic  
 electroluminescent display panels, etc. with good heat resistance  
 and low linear expansion. Thus, mixing dicyclopentadiene diacrylate 120  
 with Snowtex IPA-ST (30% silica dispersion in i-PrOH) 400 while  
 devolatilizing in vacuo at 45°, adding Irgacure 184  
 (photoinitiator) 0.6 and N,N-dimethylaminoethyl acrylate 0.1 g and  
 devolatilizing gave a composite composition which was molded between 2 glass  
 panels, irradiated with UV light, and heated in a vacuum oven at  
 100° for 3 h and at 275° for 3 h to give a sheet with  
 thickness 395 µm, average linear expansion coefficient 47, good solvent

resistance, storage modulus  $5.7 \times 10^9$  and  $2.0 \times 10^9$  Pa at  $30^\circ$  and at  $250^\circ$ , resp.,  $\tan \delta$  fluctuation 0.018, 500-nm light transmission 89%, retardation value  $<3$  and no warpage.

IT 478068-45-0P, Dicyclopentadienyl diacrylate-dimethylaminoethyl acrylate copolymer 478068-46-1P, Dimethylaminoethyl acrylate-perhydro(1,4:5,8-dimethanonaphthalene) (2,3,7-trioxymethyl triacrylate) copolymer 566939-76-2P, (3-Acryloxypropyl)methyldimethoxysilane-dicyclopentadienyl diacrylate-dimethylaminoethyl acrylate copolymer 566939-77-3P, Dicyclopentadienyl diacrylate-dimethylaminoethyl acrylate-cyclohexyldiethylmethoxysilane copolymer 566939-78-4P, 3-(Acryloylxy)propyldimethylmethoxysilane-dicyclopentadienyl diacrylate-dimethylaminoethyl acrylate copolymer 566939-79-5P, (3-Acryloxypropyl)dimethylmethoxysilane-dicyclopentadienyl diacrylate-cyclohexyldiethylmethoxysilane-dimethylaminoethyl acrylate copolymer 566939-80-8P, (3-Acryloxypropyl)methyldimethoxysilane-dimethylaminoethyl acrylate-perhydro(1,4:5,8-dimethanonaphthalene) (2,3,7-trimethanol triacrylate) copolymer 566939-81-9P, (3-Acryloxypropyl)methyldimethoxysilane-dicyclopentadienyl diacrylate-dimethylaminoethyl acrylate-perhydro(1,4:5,8-dimethanonaphthalene) (2,3,7-trimethanol triacrylate) copolymer 566939-82-0P, (3-Acryloxypropyl)methyldimethoxysilane-dimethylaminoethyl acrylate-2,3-dimethylolnorbornane diacrylate copolymer  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(manufacture of composite compns. useful for transparent moldings and their crosslinked products)

L7 ANSWER 42 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:508631 HCAPLUS

DN 139:76444

TI Inorganic particle-dispersed resin sheet with dimensional stability

IN Yagi, Nobuyoshi; Umehara, Shunji

PA Nitto Denko Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2003183521  | A    | 20030703 | JP 2002-244078  | 20020823 <-- |
| PRAI | JP 2001-269435 | A    | 20010905 |                 |              |

AB The sheet involves a support made of a resin containing inorg. oxide particles with average diameter from 100 nm to 100  $\mu$ m dispersed in. The resin may be a thermoplastic resin or a thermosetting resin and the sheet may have a urethane polymer hard coating or a gas-barrier layer. Preferably, the sheet has high transparency, small linear thermal expansion coefficient, and dimensional stability after heating and moistening. A liquid crystal cell substrate, a solar cell substrate, and an electroluminescent display device substrate made of the sheet and a liquid crystal display device and an electroluminescent device using the substrates are also claimed.

PI JP 2003183521 A 20030703

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2003183521 | A    | 20030703 | JP 2002-244078  | 20020823 <-- |

AB The sheet involves a support made of a resin containing inorg. oxide particles with average diameter from 100 nm to 100  $\mu$ m dispersed in. The resin may be a thermoplastic resin or a thermosetting resin and the sheet may have a urethane polymer hard coating or a gas-barrier layer. Preferably, the sheet has high transparency, small linear thermal expansion coefficient, and dimensional stability after heating and moistening. A liquid crystal cell

substrate, a solar cell substrate, and an electroluminescent display device substrate made of the sheet and a liquid crystal display device and an electroluminescent device using the substrates are also claimed.

ST inorg particle dispersed resin sheet support; dimensional stability particle dispersed resin sheet; thermal expansion coeff particle dispersed sheet; liq crystal display device substrate; electroluminescent device substrate resin sheet; solar cell substrate resin sheet  
IT Electroluminescent devices  
(electroluminescent device having substrate made of inorg. particle-dispersed resin sheet)  
IT 332415-23-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(hard coating; on inorg. particle-dispersed resin substrate sheet with dimensional stability)

L7 ANSWER 43 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:488878 HCAPLUS

DN 139:60192

TI Organic electroluminescent device using crosslinked charge-transporting polymers

IN Mashimo, Kiyokazu; Agata, Takashi; Sato, Katsuhiko; Ishii, Toru; Okuda, Daisuke; Ozaki, Tadayoshi; Seki, Mieko; Hirose, Eiichi; Yoneyama, Hiroto; Nukada, Katsumi; Iwasaki, Masahiro

PA Fuji Xerox Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO. | DATE         |
|------|------------------|------|----------|-----------------|--------------|
| PI   | JP 2003178884    | A    | 20030627 | JP 2002-261715  | 20020906 <-- |
| PRAI | JP 2001-284563   | A    | 20010919 |                 |              |
| OS   | MARPAT 139:60192 |      |          |                 |              |

AB The device has  $\geq 1$  organic compound layer sandwiched between a pair of (semi)transparent electrodes, wherein the layer contains charge-transporting polymers prepared by three-dimensionally crosslinking OH-containing charge-transporting substances with isocyanates having  $\geq 3$  functional groups. The device has high luminance, stability, and durability and can have large area.

TI Organic electroluminescent device using crosslinked charge-transporting polymers

| PI | JP 2003178884 A  | 20030627 |          |                 |              |
|----|--|----------|----------|-----------------|--------------|
|    | PATENT NO.   | KIND     | DATE     | APPLICATION NO. | DATE         |
| PI | JP 2003178884  | A        | 20030627 | JP 2002-261715  | 20020906 <-- |
| ST | electroluminescent device crosslinked charge transporting polymer; isocyanate hydroxy compd crosslinking EL device |          |          |                 |              |
| IT | Electroluminescent devices   |          |          |                 |              |

(large-area electroluminescent device using crosslinked charge-transporting polymers for high luminance, stability, and durability)

IT Polyurethanes, uses

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(large-area electroluminescent device using crosslinked charge-transporting polymers for high luminance, stability, and durability)

IT 545442-64-6P 545442-66-8P 545442-68-0P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(large-area electroluminescent device using crosslinked charge-transporting polymers for high luminance, stability, and durability)

L7 ANSWER 44 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:452260 HCAPLUS

DN 139:28482

TI Organic electroluminescent device with hydroxy aryl diamine and isocyanate copolymer

IN Mashimo, Kiyokazu; Agata, Takashi; Sato, Katsuhiko; Ishii, Toru; Okuda, Daisuke; Ozaki, Tadayoshi; Seki, Mieko; Hirose, Eiichi; Yoneyama, Hiroto; Nukada, Katsumi; Iwasaki, Masahiro

PA Fuji Xerox Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 140 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO. | DATE         |
|------|------------------|------|----------|-----------------|--------------|
| PI   | JP 2003168568    | A    | 20030613 | JP 2002-261714  | 20020906 <-- |
| PRAI | JP 2001-284563   | A    | 20010919 |                 |              |
| OS   | MARPAT 139:28482 |      |          |                 |              |

AB The invention refers to an electroluminescent device comprising at least one organic layer containing a hole transport material with a hydroxy group and an isocyanate compound with > 3 functional groups, wherein these two materials are three-dimensionally crosslinked to form a hole transport polymer.

TI Organic electroluminescent device with hydroxy aryl diamine and isocyanate copolymer

| PI | JP 2003168568 A | 20030613 |          |                 |              |
|----|-----------------|----------|----------|-----------------|--------------|
|    | PATENT NO.      | KIND     | DATE     | APPLICATION NO. | DATE         |
| PI | JP 2003168568   | A        | 20030613 | JP 2002-261714  | 20020906 <-- |

AB The invention refers to an electroluminescent device comprising at least one organic layer containing a hole transport material with a hydroxy group and an isocyanate compound with > 3 functional groups, wherein these two materials are three-dimensionally crosslinked to form a hole transport polymer.

ST electroluminescent device hydroxy diamine isocyanate hole transport material

IT Electroluminescent devices  
Hole transport

(organic electroluminescent device with hydroxy aryl diamine and isocyanate copolymer)

IT 537697-92-0 537697-95-3 537697-97-5

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device with hydroxy aryl diamine and isocyanate copolymer)

L7 ANSWER 45 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:417064 HCAPLUS

DN 139:140636

TI Electroluminescence from silicon-based single ion transport light emitting electrochemical cell

AU Shen, J. K.; Zhang, S. Y.; Zheng, Y.; Kong, F.; Ou, C. G.; Yang, C. Z.; Wu, X. L.; Bao, X. M.; Yuan, R. K.

CS Department of Physics, Nanjing University, Nanjing, 210093, Peop. Rep. China

SO Synthetic Metals (2003), 137(1-3), 1085-1086

CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier Science B.V.

DT Journal

LA English  
 AB Si-based single ion transport light emitting electrochem. cell (LEC) with an Al/Si/MEH-PPV:PUI/Au structure was fabricated and characterized. Under forward bias, light emission through the semi-transparent Au electrode can be observed with naked eyes. Spectral analyses suggest that the  $\pi^* \rightarrow \pi$  optical transitions in MEH-PPV and the radiative transitions in light-emitting centers at the MEH-PPV/Si interface are responsible for the electroluminescence (EL) peaks. This kind of devices will be more useful in Si-based planar displaying devices and Si-based opto-electronic integration.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Electroluminescence from silicon-based single ion transport light emitting electrochemical cell  
 SO Synthetic Metals (2003), 137(1-3), 1085-1086  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 AB Si-based single ion transport light emitting electrochem. cell (LEC) with an Al/Si/MEH-PPV:PUI/Au structure was fabricated and characterized. Under forward bias, light emission through the semi-transparent Au electrode can be observed with naked eyes. Spectral analyses suggest that the  $\pi^* \rightarrow \pi$  optical transitions in MEH-PPV and the radiative transitions in light-emitting centers at the MEH-PPV/Si interface are responsible for the electroluminescence (EL) peaks. This kind of devices will be more useful in Si-based planar displaying devices and Si-based opto-electronic integration.  
 ST electroluminescence silicon transport light emitting electrochem cell  
 IT Electroluminescent devices  
 (electrochem.; electroluminescence from silicon-based single ion transport light emitting electrochem. cell)  
 IT Light sources  
 Luminescence  
 Luminescence, electroluminescence  
 Optical transition  
 Radiative transition  
 (electroluminescence from silicon-based single ion transport light emitting electrochem. cell)  
 IT Electrochemical cells  
 (light emitting; electroluminescence from silicon-based single ion transport light emitting electrochem. cell)  
 IT 7429-90-5, Aluminum, properties 7440-21-3, Silicon, properties 7440-57-5, Gold, properties 25777-97-3, PUI 138184-36-8, MEH-PPV  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (electroluminescence from silicon-based single ion transport light emitting electrochem. cell)

L7 ANSWER 46 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:368546 HCAPLUS

DN 138:369840

TI Particles microencapsulated with crosslinked polymers and process for manufacturing same

IN Bayless, Robert G.

PA Encap Technologies, LLC, USA

SO U.S., 10 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 3

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | US 6562460    | B1   | 20030513 | US 2001-989359  | 20011120 <-- |
|    | US 2004130045 | A1   | 20040708 | US 2002-298419  | 20021114 <-- |



US 6833191 B2 20041221  
 WO 2003043813 A1 20030530 WO 2002-US37246 20021119 <--  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT,  
 TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 AU 2002352819 A1 20030610 AU 2002-352819 20021119 <--  
 JP 2005509518 T 20050414 JP 2003-545471 20021119 <--  
 CN 1615218 A 20050511 CN 2002-827279 20021119 <--  
 TW 590797 B 20040611 TW 2002-91133825 20021120 <--  
 US 2005042452 A1 20050224 US 2004-918357 20040816 <--  
 US 7297404 B2 20071120  
 PRAI US 2001-989359 A2 20011120  
 US 2002-298419 A 20021114  
 WO 2002-US37246 W 20021119

AB A process for microencapsulating a substance comprises: A. mixing a film-forming, crosslinkable, hydrolyzed polymer and an organic, nonpolar solvent for the polymer, wherein the solvent is not a solvent for particles of the substance; B. agitating the mixture to form a solution of the polymer in the solvent; C. adding particles of the substance to the solution under conditions of continuing agitation, wherein the substance particles are dispersed in the solution; D. inducing a phase separation of the solution, wherein the polymer is separated from the solution and a film-like sheath of the polymer is formed and coated on each substance particle; and E. adding a crosslinking agent to the solution under conditions of continuing agitation, wherein the film-like sheath on each substance particle crosslinks and hardens around each substance particle, whereby the microencapsulated substance particles have improved impermeability to moisture as compared to substance particles that are microencapsulated using other film-forming polymers. Green phosphor was microencapsulated with a hydrolyzed ethylene-vinyl acetate copolymer and Mondur CB-75 crosslinking agent.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

PI US 6562460 B1 20030513  
 PATENT NO. KIND DATE APPLICATION NO. DATE  
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 PI US 6562460 B1 20030513 US 2001-989359 20011120 <--  
 US 2004130045 A1 20040708 US 2002-298419 20021114 <--  
 US 6833191 B2 20041221  
 WO 2003043813 A1 20030530 WO 2002-US37246 20021119 <--  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT,  
 TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 AU 2002352819 A1 20030610 AU 2002-352819 20021119 <--  
 JP 2005509518 T 20050414 JP 2003-545471 20021119 <--  
 CN 1615218 A 20050511 CN 2002-827279 20021119 <--  
 TW 590797 B 20040611 TW 2002-91133825 20021120 <--  
 US 2005042452 A1 20050224 US 2004-918357 20040816 <--  
 US 7297404 B2 20071120

IT Electroluminescent devices  
Phase separation  
Phosphors  
(particles microencapsulated with crosslinked polymers and process for manufacturing same)

IT 521321-95-9P 521321-97-1P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(particles microencapsulated with crosslinked polymers and process for manufacturing same)

L7 ANSWER 47 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:260075 HCAPLUS  
DN 138:294687  
TI Organic electroluminescent device utilizing quinoxaline as electron transport material  
IN Takeuchi, Masataka  
PA Showa Denko K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 24 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2003100462  | A    | 20030404 | JP 2001-289773  | 20010921 <-- |
| PRAI | JP 2001-289773 |      | 20010921 |                 |              |

AB The invention refers to an electroluminescent device comprising a quinoxaline derivative I [at least one of R1-6 is connected to a polymer chain, and the rest are H, halo, hydroxyl, nitro, carboxyl, carboxy ester, sulfonate, sulfonate ester, alkoxy, (un)substituted C1-20 alkyl, C2-20 alkenyl, alkynyl, (un)substituted aryl or heterocyclic] as an electron transport material.

TI Organic electroluminescent device utilizing quinoxaline as electron transport material

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-----------------|------|----------|-----------------|--------------|
| PI | JP 2003100462 A | A    | 20030404 | JP 2001-289773  | 20010921 <-- |

AB The invention refers to an electroluminescent device comprising a quinoxaline derivative I [at least one of R1-6 is connected to a polymer chain, and the rest are H, halo, hydroxyl, nitro, carboxyl, carboxy ester, sulfonate, sulfonate ester, alkoxy, (un)substituted C1-20 alkyl, C2-20 alkenyl, alkynyl, (un)substituted aryl or heterocyclic] as an electron transport material.

ST electroluminescent device quinoxaline polymer electron transport

IT Electroluminescent devices  
Electron transport

(organic electroluminescent device utilizing quinoxaline as electron transport material)

IT 77-58-7P 128-37-0P, 2,6-Di-tert-butyl-4-methyl phenol, uses  
25568-77-8P 25656-52-4P 37196-91-1P 52232-62-9P 503606-43-7P  
503606-46-0P 503606-46-0P 503606-47-1P 504406-16-0P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(organic electroluminescent device utilizing quinoxaline as electron transport material)

IT 104-92-7, 4-Bromoanisole 109-04-6, 2-Bromopyridine 920-46-7  
2676-59-7, 3,3',4,4'-Tetraaminodiphenyl ether 13139-86-1,  
(4-Methoxyphenyl)magnesium bromide 36680-17-8 52642-16-7, Phenyl  
pyridine 481694-64-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(organic electroluminescent device utilizing quinoxaline as

electron transport material)  
 IT 5957-90-4P 51035-40-6P 481694-65-9P 504406-15-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (organic electroluminescent device utilizing quinoxaline as  
 electron transport material)

L7 ANSWER 48 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2003:6290 HCAPLUS  
 DN 138:80451  
 TI Light emitting material and organic light-emitting device  
 IN Takeuchi, Masataka; Naijo, Shuichi; Ito, Naoko; Shirane, Koro; Igarashi,  
 Takeshi; Takahashi, Yoshiaki; Kamachi, Motoaki  
 PA Showa Denko K.K., Japan  
 SO PCT Int. Appl., 318 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

|      | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|---|------|----------|------------------|--------------|
| PI   | WO 2003001616   | A2   | 20030103 | WO 2002-JP6139   | 20020620 <-- |
|      | WO 2003001616   | A3   | 20030530 |                  |              |
|      | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  |      |          |                  |              |
|      | CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,     |      |          |                  |              |
|      | GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT,     |      |          |                  |              |
|      | LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT,     |      |          |                  |              |
|      | RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG,     |      |          |                  |              |
|      | US, UZ, VN, YU, ZA, ZM, ZW  |      |          |                  |              |
|      | RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, |      |          |                  |              |
|      | KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB,     |      |          |                  |              |
|      | GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,     |      |          |                  |              |
|      | GN, GQ, GW, ML, MR, NE, SN, TD, TG                                  |      |          |                  |              |
|      | JP 2003119179   | A    | 20030423 | JP 2001-263525   | 20010831 <-- |
|      | JP 2003113246   | A    | 20030418 | JP 2001-306282   | 20011002 <-- |
|      | JP 4035976  | B2   | 20080123 |                  |              |
|      | JP 2003147021   | A    | 20030521 | JP 2001-350076   | 20011115 <-- |
|      | JP 3893949  | B2   | 20070314 |                  |              |
|      | JP 2003171391   | A    | 20030620 | JP 2001-369529   | 20011204 <-- |
|      | JP 2003077675   | A    | 20030314 | JP 2002-80456    | 20020322 <-- |
|      | JP 4036018  | B2   | 20080123 |                  |              |
|      | JP 2003073666   | A    | 20030312 | JP 2002-90590    | 20020328 <-- |
|      | JP 3969152  | B2   | 20070905 |                  |              |
|      | TW 584661   | B    | 20040421 | TW 2002-91113391 | 20020619 <-- |
|      | AU 2002345362   | A1   | 20030108 | AU 2002-345362   | 20020620 <-- |
|      | EP 1407501  | A2   | 20040414 | EP 2002-743651   | 20020620 <-- |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  |      |          |                  |              |
|      | IE, SI, LT, LV, FI, RO, MK, CY, AL, TR                              |      |          |                  |              |
|      | CN 1554128  | A    | 20041208 | CN 2002-812312   | 20020620 <-- |
|      | JP 2003206320   | A    | 20030722 | JP 2002-280931   | 20020926 <-- |
|      | JP 3951876  | B2   | 20070801 |                  |              |
|      | US 2004247934   | A1   | 20041209 | US 2003-481442   | 20031219 <-- |
|      | JP 2007099776   | A    | 20070419 | JP 2006-290648   | 20061026     |
|      | JP 2007113008   | A    | 20070510 | JP 2006-290647   | 20061026     |
|      | JP 2007145818   | A    | 20070614 | JP 2006-290649   | 20061026     |
|      | JP 2007154202   | A    | 20070621 | JP 2006-337705   | 20061215     |
|      | JP 2007211243   | A    | 20070823 | JP 2007-27557    | 20070207     |
|      | JP 2007273995   | A    | 20071018 | JP 2007-102490   | 20070410     |
| PRAI | JP 2001-186120  | A    | 20010620 |                  |              |
|      | JP 2001-188183  | A    | 20010621 |                  |              |
|      | US 2001-301844P   | P    | 20010702 |                  |              |
|      | US 2001-302372P   | P    | 20010703 |                  |              |
|      | JP 2001-241647  | A    | 20010809 |                  |              |

|                 |    |          |
|-----------------|----|----------|
| JP 2001-263525  | A  | 20010831 |
| US 2001-317115P | P  | 20010906 |
| JP 2001-306282  | A  | 20011002 |
| US 2001-330815P | P  | 20011031 |
| JP 2001-345136  | A  | 20011109 |
| JP 2001-350076  | A  | 20011115 |
| JP 2001-369529  | A  | 20011204 |
| US 2001-337157P | P  | 20011210 |
| US 2001-337160P | P  | 20011210 |
| US 2001-337161P | P  | 20011210 |
| JP 2002-80456   | A  | 20020322 |
| JP 2002-90590   | A  | 20020328 |
| WO 2002-JP6139  | W  | 20020620 |
| JP 2002-280931  | A3 | 20020926 |

AB The invention refers to a polymer light emitting material, wherein the material has a light emitting mechanism based on a transition from an excited triplet state to the ground state or transition through an excited triplet state to the ground state, and the material comprises a nonionic light emitting part which constitutes a part of the polymer or is bound to the polymer. The polymer light emitting material exhibits high light emission efficiency >5 %, which is the limit of external quantum efficiency of fluorescence and can be designed so as to have a large area and hence are suitable for mass production of organic light emitting devices.

PI WO 2003001616 A2 20030103

|    | PATENT NO.    | KIND   | DATE     | APPLICATION NO.  | DATE         |
|----|---------------|--|----------|------------------|--------------|
| PI | WO 2003001616 | A2   | 20030103 | WO 2002-JP6139   | 20020620 <-- |
|    | WO 2003001616 | A3   | 20030530 |                  |              |
|    | W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW |          |                  |              |
|    | RW:           | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                  |              |
|    | JP 2003119179 | A  | 20030423 | JP 2001-263525   | 20010831 <-- |
|    | JP 2003113246 | A  | 20030418 | JP 2001-306282   | 20011002 <-- |
|    | JP 4035976    | B2   | 20080123 |                  |              |
|    | JP 2003147021 | A  | 20030521 | JP 2001-350076   | 20011115 <-- |
|    | JP 3893949    | B2   | 20070314 |                  |              |
|    | JP 2003171391 | A  | 20030620 | JP 2001-369529   | 20011204 <-- |
|    | JP 2003077675 | A  | 20030314 | JP 2002-80456    | 20020322 <-- |
|    | JP 4036018    | B2   | 20080123 |                  |              |
|    | JP 2003073666 | A  | 20030312 | JP 2002-90590    | 20020328 <-- |
|    | JP 3969152    | B2   | 20070905 |                  |              |
|    | TW 584661     | B  | 20040421 | TW 2002-91113391 | 20020619 <-- |
|    | AU 2002345362 | A1   | 20030108 | AU 2002-345362   | 20020620 <-- |
|    | EP 1407501    | A2   | 20040414 | EP 2002-743651   | 20020620 <-- |
|    | R:            | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |          |                  |              |
|    | CN 1554128    | A  | 20041208 | CN 2002-812312   | 20020620 <-- |
|    | JP 2003206320 | A  | 20030722 | JP 2002-280931   | 20020926 <-- |
|    | JP 3951876    | B2   | 20070801 |                  |              |
|    | US 2004247934 | A1   | 20041209 | US 2003-481442   | 20031219 <-- |
|    | JP 2007099776 | A  | 20070419 | JP 2006-290648   | 20061026     |
|    | JP 2007113008 | A  | 20070510 | JP 2006-290647   | 20061026     |
|    | JP 2007145818 | A  | 20070614 | JP 2006-290649   | 20061026     |
|    | JP 2007154202 | A  | 20070621 | JP 2006-337705   | 20061215     |
|    | JP 2007211243 | A  | 20070823 | JP 2007-27557    | 20070207     |
|    | JP 2007273995 | A  | 20071018 | JP 2007-102490   | 20070410     |

ST electroluminescent device phosphorescence phosphor iridium  
phenyl pyridine polymer

IT Electroluminescent devices  
Excited triplet state  
Phosphorescent substances  
Phosphors  
(light emitting material and organic light-emitting device using  
phosphorescent iridium Ph pyridine polymer derivative)

IT 11120-54-0, Oxadiazole 15082-28-7, PBD 19473-91-7 25067-59-8,  
Poly(N-vinyl carbazole) 190785-27-4 481694-57-9 481694-58-0  
481694-59-1 481694-60-4  
RL: DEV (Device component use); USES (Uses)  
(light emitting material and organic light-emitting device using  
phosphorescent iridium Ph pyridine polymer derivative)

IT 15635-87-7DP, reaction products with hexylphenylpyridine 481694-50-2P  
481694-52-4P 481694-53-5P 481694-54-6P 481694-56-8P  
481694-68-2P 481694-70-6P 481694-72-8P 481694-73-9P  
481694-74-0P 481694-91-1P 481694-92-2P 481694-93-3P  
481694-94-4P 481694-95-5P 481695-02-7P 481695-03-8P  
481695-04-9P 481695-06-1P 481696-03-1P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(light emitting material and organic light-emitting device using  
phosphorescent iridium Ph pyridine polymer derivative)

IT 51035-40-6P, 2-(4-Hydroxy)phenylpyridine 59990-76-0P 259822-25-8P  
338387-34-1P 391604-55-0P 391611-77-1P 481667-88-3P 481667-90-7P  
481667-92-9P 481667-97-4P 481694-46-6P 481694-47-7P 481694-48-8P  
481694-49-9P 481694-51-3P 481694-55-7P 481694-61-5P 481694-62-6P  
481694-63-7P 481694-64-8P 481694-65-9P 481694-66-0P 481694-67-1P  
481694-69-3P 481694-71-7P 481694-75-1P 481694-76-2P 481694-77-3P  
481694-78-4P 481694-79-5P 481694-80-8P 481694-81-9P 481694-82-0P  
481694-83-1P 481694-84-2P 481694-85-3P 481694-86-4P 481694-87-5P  
481694-88-6P 481694-89-7P 481694-90-0P 481694-96-6P 481694-97-7P  
481694-98-8P 481694-99-9P 481695-00-5P 481695-01-6P 481695-07-2P  
481695-08-3P 481695-09-4P 481695-10-7P 481695-11-8P 481695-12-9P  
481695-13-0P 481695-14-1P 481695-99-2P 481696-01-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(light emitting material and organic light-emitting device using  
phosphorescent iridium Ph pyridine polymer derivative)

L7 ANSWER 49 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:6289 HCAPLUS  
DN 138:80798  
TI Light-emitting material and organic light-emitting device  
IN Shirane, Koro; Kamachi, Motoaki; Ito, Naoko; Koyama, Tamami  
PA Showa Denko K. K., Japan  
SO PCT Int. Appl., 43 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

|    | PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE         |
|----|---------------|--|----------|-----------------|--------------|
| PI | WO 2003001615 | A1   | 20030103 | WO 2002-JP1475  | 20020220 <-- |
|    | W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW |          |                 |              |
|    | RW:           | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  |          |                 |              |

BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2003003165 A 20030108 JP 2001-190766 20010625 <--  
AU 2002233654 A1 20030108 AU 2002-233654 20020220 <--  
TW 543343 B 20030721 TW 2002-91102946 20020220 <--  
EP 1399981 A1 20040324 EP 2002-700627 20020220 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

US 2003181694 A1 20030925 US 2002-311276 20021217 <--  
US 7223483 B2 20070529

PRAI JP 2001-190766 A 20010625  
US 2001-301845P P 20010702  
WO 2002-JP1475 W 20020220

AB A light-emitting material, preferably organic light-emitting material, is described comprising a light-emitting substance spatially constricted and confined in an order of two or more dimensions on the level of mol., wherein the luminescence of the light-emitting substance is from an excited triplet state or through an excited triplet state, wherein the light-emitting material is provided with a space defined by a nucleic acid having a helix structure or its derivs. for constricting and confining the light-emitting substance, or with a space defined by a host compound (e.g., cyclodextrin or its derivs.) that is capable of forming an inclusion compound with the light-emitting substance for constricting and confining the light-emitting substance.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

PI WO 2003001615 A1 20030103

| PATENT NO.   | KIND | DATE     | APPLICATION NO.  | DATE         |
|--|------|----------|------------------|--------------|
| WO 2003001615  | A1   | 20030103 | WO 2002-JP1475   | 20020220 <-- |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,<br>CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,<br>GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT,<br>LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT,<br>RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG,<br>US, UZ, VN, YU, ZA, ZM, ZW<br>RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,<br>CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,<br>BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG |      |          |                  |              |
| JP 2003003165  | A    | 20030108 | JP 2001-190766   | 20010625 <-- |
| AU 2002233654  | A1   | 20030108 | AU 2002-233654   | 20020220 <-- |
| TW 543343  | B    | 20030721 | TW 2002-91102946 | 20020220 <-- |
| EP 1399981   | A1   | 20040324 | EP 2002-700627   | 20020220 <-- |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,<br>IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |      |          |                  |              |
| US 2003181694  | A1   | 20030925 | US 2002-311276   | 20021217 <-- |
| US 7223483   | B2   | 20070529 |                  |              |

ST electroluminescent device intercalation material

IT Electroluminescent devices  
(displays; light-emitting material and organic light-emitting device using intercalation compds.)

IT Luminescent screens  
Luminescent substances  
(electroluminescent; light-emitting material and organic light-emitting device using intercalation compds.)

IT 27754-92-3  
RL: DEV.(Device component use); USES (Uses)  
(light-emitting layer binder; light-emitting material and organic light-emitting device using intercalation compds.)

L7 ANSWER 50 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:719353 HCAPLUS

DN 138:63506

TI Efficient polarized light-emitting diodes utilizing ultrathin

photoaddressable alignment layers

AU Yang, X. H.; Neher, D.; Lucht, S.; Nothofer, H.; Guntner, R.; Scherf, U.;  
Hagen, R.; Kostromine, S.

CS Institute of Physics, University of Potsdam, Potsdam, 14469, Germany

SO Applied Physics Letters (2002), 81(13), 2319-2321  
CODEN: APPLAB; ISSN: 0003-6951

PB American Institute of Physics

DT Journal

LA English

AB We demonstrate that an ultrathin photoaddressable polymer (PAP) layer with  
a thickness as small as 5 nm can be utilized for the mono-domain alignment  
of thermotropic liquid crystalline polyfluorene. The optical anisotropies in  
absorption and emission are found to be independent of the PAP layer  
thickness within a range of 5 to 30 nm. On the other hand, decreasing the  
PAP layer thickness greatly improves the performance of polarized blue  
light-emitting diodes: With a PAP layer thickness of only 10 nm, the  
device turns on at 5 V and reaches a brightness of 100 cd/m<sup>2</sup> at 8 V with  
an efficiency of 0.66 cd/A.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Applied Physics Letters (2002), 81(13), 2319-2321  
CODEN: APPLAB; ISSN: 0003-6951

IT Electroluminescent devices  
Polarized laser radiation  
Ultrathin films  
(efficient polarized light-emitting diodes utilizing ultrathin  
photoaddressable alignment layers)

IT 200261-59-2 479055-27-1  
RL: DEV (Device component use); PEP (Physical, engineering or chemical  
process); PRP (Properties); PYP (Physical process); PROC (Process); USES  
(Uses)  
(photoaddressable polymer film; efficient polarized light-emitting  
diodes utilizing ultrathin photoaddressable alignment layers)

L7 ANSWER 51 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:560133 HCAPLUS

DN 137:279579

TI Synthesis of a novel blue-light-emitting polymer material bearing coumarin  
pendants

AU Lu, Zhi Yun; Yuan, Tong Suo; Chen, Yan Lai; Wei, Xiao Qiang; Zhu, Wei Guo;  
Xie, Ming Gui

CS Department of Chemistry, Sichuan University, Chengdu, 610064, Peop. Rep.  
China

SO Chinese Chemical Letters (2002), 13(7), 674-677  
CODEN: CCLEE7; ISSN: 1001-8417

PB Chinese Chemical Society

DT Journal

LA English

AB A novel blue luminescent polymer bearing coumarin pendants was prepared Its  
luminescent properties were determined indicating that it had strong blue  
fluorescent properties and good film formation ability. This novel  
polymer can be used as a blue organic electroluminescent material  
(OELM) in organic electroluminescent devices.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Chinese Chemical Letters (2002), 13(7), 674-677  
CODEN: CCLEE7; ISSN: 1001-8417

AB A novel blue luminescent polymer bearing coumarin pendants was prepared Its  
luminescent properties were determined indicating that it had strong blue  
fluorescent properties and good film formation ability. This novel  
polymer can be used as a blue organic electroluminescent material  
(OELM) in organic electroluminescent devices.

IT 467237-89-4DP, reaction products with copolymer 467237-90-7DP,

reaction products with coumarin derivative  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(synthesis of novel blue-light-emitting polymer material bearing  
coumarin pendants)

L7 ANSWER 52 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2002:339361 HCAPLUS  
DN 137:116361  
TI Photoemission study of the thermal and photochemical decomposition of a  
urethane-substituted polythiophene  
AU Herrera, G. J.; Whitten, J. E.  
CS The Department of Chemistry and Center for Advanced Materials, The  
University of Massachusetts Lowell, Lowell, MA, 01854, USA  
SO Synthetic Metals (2002), 128(3), 317-324  
CODEN: SYMEDZ; ISSN: 0379-6779  
PB Elsevier Science B.V.  
DT Journal  
LA English  
AB X-ray and UV photoelectron spectroscopies were used to study the thermal  
and photochem. decomposition of films of poly[2-(3-thienyl)ethanol  
n-butoxycarbonylmethylurethane], a polythiophene with a H-bond forming  
urethane side-chain. The films were heated in vacuum and in a partial  
pressure of O. In both cases, decomposition of the side-chain, as evidenced by  
a loss of N 1s intensity, occurs in the range 200-300°, consistent  
with thermogravimetric analyses. A modest irreversible thermochromism is  
also observed for spin-coated films, with the maximum optical absorption  
shifting from 444 to 412 nm upon heating from room temperature to 460°. Films  
heated to 480° show core level signals consistent with complete side-chain  
decomposition to volatile species, leaving the thiophene backbone on the  
surface. He I and x-ray valence spectroscopic measurements indicate that  
the presence of the urethane side-chains broadens the  $\pi$ -conjugation features  
to such an extent that they cannot be resolved until the side-chains  
decompose. Photochem. stability studies of the polymer films exposed in  
air to 585, 532 and 397 nm light demonstrate that only the latter induces  
decomposition, as detected by the emergence of an addnl. S 2p peak.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Synthetic Metals (2002), 128(3), 317-324  
CODEN: SYMEDZ; ISSN: 0379-6779  
IT Heat treatment  
Luminescence, electroluminescence  
Photolysis  
Thermal decomposition  
Thermochromism  
UV and visible spectra  
UV photoelectron spectra  
X-ray photoelectron spectra  
(photoemission study of thermal and photochem. decomposition of a  
urethane-substituted polythiophene)  
IT 182691-54-9, Poly[2-(3-thienyl)ethanol n-butoxycarbonylmethylurethane]  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); PRP (Properties); PYP (Physical process); PROC (Process)  
(photoemission study of thermal and photochem. decomposition of a  
urethane-substituted polythiophene)

L7 ANSWER 53 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2002:313486 HCAPLUS  
DN 136:348063  
TI Organic electroluminescent device  
IN Sakakibara, Mitsuhiko; Yasuda, Hiroyuki; Negoro, Yasunori  
PA JSR Ltd., Japan; Futaba Denshi Kogyo Co., Ltd.; Kokusai Kiban Zairyo



Kenkyusho K. K.  
SO Jpn. Kokai Tokkyo Koho, 15 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2002124389  | A    | 20020426 | JP 2000-314940  | 20001016 <-- |
| PRAI | JP 2000-314940 |      | 20001016 |                 |              |

AB The invention relates to an organic electroluminescent device comprising the hole transport layer made of the polymer having the structural unit represented by I [R1 = H, alkyl, and Ph groups; R2-5 = H, alkyl, alkoxy, Ph and dialkylamino groups; X = single bond, phenylene, carbonyl, and divalent organic groups containing phenylene and/or carbonyl group].

TI Organic electroluminescent device

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2002124389 | A    | 20020426 | JP 2000-314940  | 20001016 <-- |

AB The invention relates to an organic electroluminescent device comprising the hole transport layer made of the polymer having the structural unit represented by I [R1 = H, alkyl, and Ph groups; R2-5 = H, alkyl, alkoxy, Ph and dialkylamino groups; X = single bond, phenylene, carbonyl, and divalent organic groups containing phenylene and/or carbonyl group].

ST org electroluminescent device hole transport material carbazole deriv

IT Electroluminescent devices

(hole transport material for organic electroluminescent device)

IT 197089-43-3 397247-48-2 397247-49-3 397247-50-6  
397247-52-8

RL: DEV (Device component use); USES (Uses)

(hole transport material for organic electroluminescent device)

IT 86-74-8, Carbazole 98-95-3, Nitrobenzene, reactions 920-46-7,  
Methacryloyl chloride 1205-64-7 7726-95-6, Bromine, reactions  
30674-80-7 397247-45-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(hole transport material for organic electroluminescent device)

IT 16982-76-6P 255829-24-4P 397247-44-8P 397247-46-0P 397247-47-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)

(hole transport material for organic electroluminescent device)

L7 ANSWER 54 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:294029 HCAPLUS

DN 136:316681

TI Polymers having attached luminescent metal complexes and devices made with such polymers

IN Periyasamy, Mookkan; Grushin, Vladimir; Petrov, Viacheslav A.; Herron, Norman; Radu, Nora Sabina

PA E. I. Du Pont de Nemours & Co., USA

SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | WO 2002031896 | A2   | 20020418 | WO 2001-US31449 | 20011009 <-- |
|    | WO 2002031896 | A3   | 20030904 |                 |              |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,  
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG,  
KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR,  
IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG

CA 2423886 A1 20020418 CA 2001-2423886 20011009 <--  
AU 2002015322 A 20020422 AU 2002-15322 20011009 <--  
EP 1364419 A2 20031126 EP 2001-983933 20011009 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

CN 1531758 A 20040922 CN 2001-817125 20011009 <--  
JP 2004531850 T 20041014 JP 2002-535182 20011009 <--

PRAI US 2000-238974P P 20001010  
WO 2001-US31449 W 20011009

OS MARPAT 136:316681

AB Organic electronic devices are described which comprise an emitting layer which comprises  $\geq 1$  functionalized polymer having a plurality of first-type functional groups, at least a portion of the functional groups being coordinated to  $\geq 1$  metal or metal-containing complex, or in which the groups have a charge and are associated with  $\geq 1$  metal complex having an opposite charge. The emitting layers may also include organic charge transport materials. Selected polymer-metal complexes and salts are also described.

PI WO 2002031896 A2 20020418

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------|------|----------|-----------------|--------------|
| WO 2002031896 | A2   | 20020418 | WO 2001-US31449 | 20011009 <-- |
| WO 2002031896 | A3   | 20030904 |                 |              |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,  
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG,  
KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR,  
IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG

CA 2423886 A1 20020418 CA 2001-2423886 20011009 <--  
AU 2002015322 A 20020422 AU 2002-15322 20011009 <--  
EP 1364419 A2 20031126 EP 2001-983933 20011009 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

CN 1531758 A 20040922 CN 2001-817125 20011009 <--  
JP 2004531850 T 20041014 JP 2002-535182 20011009 <--

ST metal complex polymer salt electroluminescent device; metal polymer complex electroluminescent device

IT Luminescent substances  
(electroluminescent; metal-polymer complexes and salts and devices employing them)

IT Electroluminescent devices  
(metal-polymer complexes and salts and devices employing them)

IT 14054-87-6DP, reaction products with polymers 14592-81-5DP, reaction products with polymers 26284-14-0DP, reaction products with metal compds. 26355-01-1DP, 2-Hydroxyethyl methacrylate-methyl methacrylate copolymer, reaction products with metal compds. 56315-94-7DP, 2-Hydroxyethyl methacrylate-isobutyl methacrylate copolymer, reaction products with metal compds. 66028-15-7DP, 2-(Dimethylamino)ethyl methacrylate-Isobutylmethacrylate copolymer, reaction products with metal

comps. 72460-28-7DP, 4,4'-Bis(chlorocarbonyl)-2,2'-bipyridine, reaction products with polymers and metal comps. 190370-38-8DP, reaction products with polymers 387859-66-7DP, reaction products with polymers 412032-55-4DP, reaction products with electron-transporting comps. and metal comps. 412032-56-5DP, reaction products with polymers and metal comps. 412032-57-6DP, reaction products with electron-transporting comps. and metal comps. 412032-58-7DP, reaction products with metal comps. 412032-59-8DP, reaction products with metal comps. 412032-60-1DP, reaction products with metal comps.

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(metal-polymer complexes and salts and devices employing them)

IT 37295-36-6P 66028-15-7P, 2-(Dimethylamino)ethyl methacrylate-Isobutylmethacrylate copolymer 103595-82-0P 190370-38-8P 370878-58-3P 387859-66-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(metal-polymer complexes and salts and devices employing them)

L7 ANSWER 55 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:254691 HCAPLUS

DN 137:69886

TI Enhanced electroluminescence of urethane containing processable polythiophene derivative by addition of dye molecules

AU Kaur, Amarjeet; Cazeca, Mario J.; Chittibabu, Kethinni G.; Kumar, Jayant; Tripathy, Sukant K.

CS Departments of Physics and Chemistry, Center for Advanced Materials, University of Massachusetts, Lowell, MA, USA

SO Materials Research Society Symposium Proceedings (2001), 660(Organic Electronic and Photonic Materials and Devices), JJ5.30/1-JJ5.30/6

CODEN: MRSPDH; ISSN: 0272-9172

PB Materials Research Society

DT Journal

LA English

AB Organic electroluminescent (EL) diodes based on fluorescent dyes and conducting polymers have attracted the interest of researchers, mainly because of their emission in the visible region and for application to large area portable flat panel display devices, driven at low voltages. Therefore, for the development of higher efficiency polymer EL diodes, the optimal combination of the merits of organic fluorescent dye mols. with that of conjugated polymer is an important approach. The authors report electroluminescence studies of polymer light emitting diodes (p-LEDs) fabricated with poly[2-(3-thienyl)ethanol-butoxycarbonylmethyl urethane] (PURET) and its composite with 4-dicyanomethylene-2-methyl-6-(p-dimethylaminostyryl)-4H pyran (DCM) dye. These materials were chosen in view of the fact that PURET exhibits a small overlap between emission and absorption spectra whereas DCM has a good efficiency of trapping both electrons as well as holes. Polyaniline was used as hole injecting layer whereas tris-8-hydroxyquinoline-Al as electron injecting layer. Enhanced electroluminescence with bright yellow color was observed in p-LEDs by the addition of dye.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Enhanced electroluminescence of urethane containing processable polythiophene derivative by addition of dye molecules

SO Materials Research Society Symposium Proceedings (2001), 660(Organic Electronic and Photonic Materials and Devices), JJ5.30/1-JJ5.30/6

CODEN: MRSPDH; ISSN: 0272-9172

AB Organic electroluminescent (EL) diodes based on fluorescent dyes and conducting polymers have attracted the interest of researchers, mainly because of their emission in the visible region and for application to

large area portable flat panel display devices, driven at low voltages. Therefore, for the development of higher efficiency polymer EL diodes, the optimal combination of the merits of organic fluorescent dye mols. with that of conjugated polymer is an important approach. The authors report electroluminescence studies of polymer light emitting diodes (p-LEDs) fabricated with poly[2-(3-thienyl)ethanol-butoxycarbonylmethyl urethane] (PURET) and its composite with 4-dicyanomethylene-2-methyl-6-(p-dimethylaminostyryl)-4H pyran (DCM) dye. These materials were chosen in view of the fact that PURET exhibits a small overlap between emission and absorption spectra whereas DCM has a good efficiency of trapping both electrons as well as holes. Polyaniline was used as hole injecting layer whereas tris-8-hydroxyquinoline-Al as electron injecting layer. Enhanced electroluminescence with bright yellow color was observed in p-LEDs by the addition of dye.

ST enhanced electroluminescence urethane contg processable  
polythiophene deriv; dye mol LED diode  
IT Conducting polymers  
Electric current-potential relationship  
Electroluminescent devices  
Luminescence, electroluminescence  
(enhanced electroluminescence of urethane containing processable  
polythiophene derivative by addition of dye mols.)  
IT Trapping  
(of electrons and holes; enhanced electroluminescence of  
urethane containing processable polythiophene derivative by addition of dye  
mols.)  
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 25233-30-1, Polyaniline  
51325-91-8, DCM 182691-54-9  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(enhanced electroluminescence of urethane containing processable  
polythiophene derivative by addition of dye mols.)

L7 ANSWER 56 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:197543 HCAPLUS

DN 137:25867

TI Photo-induced microstructured polymers for the optimization and control of  
organic devices emission properties

AU Rocha, Licinio; Dumarcher, Vincent; Malcor, Eymeric; Fiorini, Celine;  
Denis, Christine; Raimond, Paul; Geffroy, Bernard; Nunzi, Jean-Michel

CS DECS/SE2M/Laboratoire des Composants Organiques, CEA-Saclay,  
Gif-sur-Yvette, 91191, Fr.

SO Synthetic Metals (2002), 127(1-3), 75-79

CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier Science S.A.

DT Journal

LA English

AB Patterning and microstructuring of functional polymers is a key process to  
control the emission properties of polymer thin films towards the design  
and realization of devices such as electroluminescent diodes  
(OLEDs) or organic lasers. The authors present an original method for the  
realization of periodic structures in the visible wavelength region using  
laser controlled mol. motion. The optical pumping of an azo-dye aromatic  
polymer film was indeed shown to allow efficient mass-transport in  
conjunction with the interference pattern. The authors have implemented a  
compact organic laser using transversal one photon pumping of a sinusoidally  
modulated surface of such periodically structured films upcovered with a  
luminescent dye. Efficient laser emission was observed over the whole  
emission spectrum of the luminescent dye following control of the surface  
relief grating periodicity. Patterning of gratings with periodicities  
going down to 200 nm was recently achieved. Interestingly, surface relief  
gratings also appear to be a good way to optimize OLED emission  
properties.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Synthetic Metals (2002), 127(1-3), 75-79  
 CODEN: SYMEDZ; ISSN: 0379-6779

AB Patterning and microstructuring of functional polymers is a key process to control the emission properties of polymer thin films towards the design and realization of devices such as electroluminescent diodes (OLEDs) or organic lasers. The authors present an original method for the realization of periodic structures in the visible wavelength region using laser controlled mol. motion. The optical pumping of an azo-dye aromatic polymer film was indeed shown to allow efficient mass-transport in conjunction with the interference pattern. The authors have implemented a compact organic laser using transversal one photon pumping of a sinusoidally modulated surface of such periodically structured films upcovered with a luminescent dye. Efficient laser emission was observed over the whole emission spectrum of the luminescent dye following control of the surface relief grating periodicity. Patterning of gratings with periodicities going down to 200 nm was recently achieved. Interestingly, surface relief gratings also appear to be a good way to optimize OLED emission properties.

ST microstructured polymer electroluminescent device semiconductor laser

IT Diffraction gratings  
 Electroluminescent devices  
 Mass transfer  
 Optical modulation  
 Optical pumping  
 Semiconductor lasers  
 UV and visible spectra  
 (photo-induced microstructured polymers for optimization and control of organic devices emission properties)

IT 119989-05-8 169236-73-1  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (photo-induced microstructured polymers for optimization and control of organic devices emission properties)

L7 ANSWER 57 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2002:193188 HCAPLUS  
 DN 136:254346  
 TI Luminescent component and production method  
 IN Takeuchi, Masataka  
 PA Showa Denko K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2002075001  | A    | 20020315 | JP 2000-264950  | 20000901 <-- |
| PRAI | JP 2000-264950 |      | 20000901 |                 |              |

AB The invention refers to a electrochemiluminescent device comprising a at least one polymer containing monomers with functional groups CH<sub>2</sub>:CR<sub>1</sub>C:OO- or CH<sub>2</sub>:CR<sub>2</sub>C:O(OR<sub>3</sub>)xNR<sub>4</sub>C:OO- [R<sub>1</sub>,2 = H, < 10 C aryl; R<sub>3</sub> = divalent organic, straight chain, branched or ring and may contain a hetero atom; R<sub>4</sub> = H, straight chain, branched or ring < 10 C alkyl, alkoxy or ether; x = 0, 1] and a electrolyte salt as a ion conducting material, and a transition metal complex as a luminescent layer.

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-----------------|------|----------|-----------------|--------------|
| PI | JP 2002075001 A |      | 20020315 |                 |              |
| PI | JP 2002075001   | A    | 20020315 | JP 2000-264950  | 20000901 <-- |

IT Electroluminescent devices  
 (chemiluminescent; luminescent component and production method)

IT 121447-57-2P 391953-66-5P 404028-62-2P 404333-00-2P  
 404333-01-3P 404333-02-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (luminescent component and production method)

L7 ANSWER 58 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2002:142396 HCAPLUS  
 DN 136:316627  
 TI Voltage tunable multicolor light emitting diodes based on a dye-doped  
 polythiophene derivative  
 AU Kaur, Amarjeet; Cazeca, Mario J.; Sengupta, Sandip K.; Kumar, Jayant;  
 Tripathy, Sukant K.  
 CS Center for Advanced Materials, Department of Physics and Chemistry,  
 University of Massachusetts, Lowell, MA, 01854, USA  
 SO Synthetic Metals (2002), 126(2-3), 283-288  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 PB Elsevier Science S.A.  
 DT Journal  
 LA English  
 AB The electroluminescence behavior of polymeric light emitting  
 diodes based on poly[2-(3-thienyl)ethanol-n-butoxy carbonyl-  
 methylurethane] (PURET) as an emitting layer was studied. The organic layer  
 was doped with varying concns. of 4-dicyanomethylene-2-Me-6-(p-  
 dimethylaminostyryl)-4H-pyran (DCM) dye. On addition of a very small amount of  
 the dye, a voltage tunable multicolor emission with enhanced luminance  
 .apprx.1000 cd/m2 was observed. The mechanism of conduction responsible for  
 color tuning was explored.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Synthetic Metals (2002), 126(2-3), 283-288  
 CODEN: SYMEDZ; ISSN: 0379-6779

AB The electroluminescence behavior of polymeric light emitting  
 diodes based on poly[2-(3-thienyl)ethanol-n-butoxy carbonyl-  
 methylurethane] (PURET) as an emitting layer was studied. The organic layer  
 was doped with varying concns. of 4-dicyanomethylene-2-Me-6-(p-  
 dimethylaminostyryl)-4H-pyran (DCM) dye. On addition of a very small amount of  
 the dye, a voltage tunable multicolor emission with enhanced luminance  
 .apprx.1000 cd/m2 was observed. The mechanism of conduction responsible for  
 color tuning was explored.

IT Electric conductivity  
 Electric current-potential relationship  
 Electric potential  
 Electroluminescent devices  
 UV and visible spectra  
 (voltage tunable multicolor light emitting diodes based on dye-doped  
 polythiophene derivative)

IT 182691-54-9, Poly[2-(3-thienyl)ethanol-n-butoxy  
 carbonyl-methylurethane]  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (voltage tunable multicolor light emitting diodes based on dye-doped  
 polythiophene derivative)

L7 ANSWER 59 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2002:126370 HCAPLUS  
 DN 136:184646  
 TI Manufacture of heat and chemically resistant crosslinked methyl  
 methacrylate copolymers  
 IN Enya, Masahiro; Kawasaki, Noboru; Sekiguchi, Michiru; Sasagawa, Katsuyoshi  
 PA Mitsui Chemicals Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2002053622  | A    | 20020219 | JP 2000-240929  | 20000809 <-- |
| PRAI | JP 2000-240929 |      | 20000809 |                 |              |

AB The copolymers, which may be useful for bases of liquid crystal displays, organic electroluminescent displays, etc., are manufactured by polymerization of 100 parts Me methacrylate (I) with 5-50 parts 3-H<sub>2</sub>C:CMcC<sub>6</sub>H<sub>4</sub>CMc<sub>2</sub>NHCO<sub>2</sub>CHR<sub>1</sub>CH<sub>2</sub>O<sub>2</sub>CCR<sub>2</sub>:CH<sub>2</sub> (R<sub>1</sub>, R<sub>2</sub> = H, Me). Thus, 100 parts I was polymerized with 10 parts 3-H<sub>2</sub>C:CMcC<sub>6</sub>H<sub>4</sub>CMc<sub>2</sub>NHCO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>CCMe:CH<sub>2</sub> in the presence of Bz<sub>2</sub>O<sub>2</sub> at 60-110° for 7 h in a glass mold to give a copolymer with T<sub>g</sub> 120°, which showed no change when contacted with IPA or xylene.

|    |                 |          |      |                 |      |
|----|-----------------|----------|------|-----------------|------|
| PI | JP 2002053622 A | 20020219 |      |                 |      |
|    | PATENT NO.      | KIND     | DATE | APPLICATION NO. | DATE |

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2002053622 | A | 20020219 | JP 2000-240929 | 20000809 <-- |
|----|---------------|---|----------|----------------|--------------|

AB The copolymers, which may be useful for bases of liquid crystal displays, organic electroluminescent displays, etc., are manufactured by polymerization of 100 parts Me methacrylate (I) with 5-50 parts 3-H<sub>2</sub>C:CMcC<sub>6</sub>H<sub>4</sub>CMc<sub>2</sub>NHCO<sub>2</sub>CHR<sub>1</sub>CH<sub>2</sub>O<sub>2</sub>CCR<sub>2</sub>:CH<sub>2</sub> (R<sub>1</sub>, R<sub>2</sub> = H, Me). Thus, 100 parts I was polymerized with 10 parts 3-H<sub>2</sub>C:CMcC<sub>6</sub>H<sub>4</sub>CMc<sub>2</sub>NHCO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>CCMe:CH<sub>2</sub> in the presence of Bz<sub>2</sub>O<sub>2</sub> at 60-110° for 7 h in a glass mold to give a copolymer with T<sub>g</sub> 120°, which showed no change when contacted with IPA or xylene.

IT 398460-26-9P 398460-27-0P

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(manufacture of heat and chemical resistant crosslinked Me methacrylate copolymers)

L7 ANSWER 60 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:115683 HCAPLUS

DN 137:141877

TI Comparative properties of optically clear epoxy encapsulants

AU Edwards, Maury; Zhou, Yan

CS Dexter Electronic Materials, Loctite Corporation, USA

SO Proceedings of SPIE-The International Society for Optical Engineering (2001), 4436(Wave-Optical Systems Engineering), 190-197  
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB Three epoxy systems were evaluated for phys. and optical properties. The three systems chosen for the study were selected on the basis of their optical clarity, color and chemical. Three distinctly different chemistries were chosen, aromatic epoxy-amine cured, aromatic epoxy- anhydride cured and cycloaliph. epoxy-anhydride cured. All three systems remained optically clear and water-white after full cure. The three selected systems were tested for phys. properties, adhesion and light transmission properties. Light transmission was measured after thermal and humidity exposure. Adhesion was measured after humidity exposure only. Both of the epoxy-anhydride systems performed well in optical properties but poorer in adhesion as compared to the epoxy-amine system. The aromatic epoxy- amine system discolored badly during thermal exposure at 100 C. Data generated from this work will be used in selecting clear encapsulating materials for photonic applications. No single system offers optimal performance in all areas. The best compromise material is the aromatic epoxy-anhydride system.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Proceedings of SPIE-The International Society for Optical Engineering (2001), 4436(Wave-Optical Systems Engineering), 190-197  
CODEN: PSISDG; ISSN: 0277-786X

IT Electroluminescent devices  
Humidity  
(effect of humidity exposure on light transmission of optically clear epoxy encapsulants)

IT 28185-25-3, Bisphenol A diglycidyl ether-hexahydro-phthalic anhydride copolymer 30327-78-7 110302-44-8, Bisphenol A diglycidyl ether-polyoxypropylene diamine copolymer  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(comparative properties of optically clear epoxy encapsulants)

L7 ANSWER 61 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:113165 HCAPLUS

DN 136:175241

TI Carbazole derivative, its polymer, and its use as hole-transporting material in electroluminescent device

IN Sakakibara, Mitsuhiko; Yasuda, Hiroyuki; Negoro, Yasunori

PA Jsr Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 25 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2002047271  | A    | 20020212 | JP 2000-228927  | 20000728 <-- |
| PRAI | JP 2000-228927 |      | 20000728 |                 |              |

OS MARPAT 136:175241

AB The hole-transporting material contains a polymer having a unit derived from a carbazole derivative I (R1 = H, alkyl, Ph; R2-R5 = H, alkyl, k alkoxy, Ph, dialkylamino; X = none, divalent group having phenylene and/or CO) and other optional polymers satisfying the ratio of I unit in the total polymers  $\geq 5$  mass%. The material shows high durability in repeated use.

TI Carbazole derivative, its polymer, and its use as hole-transporting material in electroluminescent device

PI JP 2002047271 A 20020212

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2002047271 | A    | 20020212 | JP 2000-228927  | 20000728 <-- |

ST carbazole polymer hole transporter electroluminescent device; EL device hole transporting agent carbazole polymer

IT Electroluminescent devices  
(carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT Monomers

RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT 16982-76-6P

RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(bromination of; carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT 397247-48-2P 397247-49-3P 397247-50-6P

397247-52-8P

RL: DEV (Device component use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT 197089-43-3



RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT 255829-24-4P 397247-45-9P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT 86-74-8, Carbazole 98-95-3, Nitrobenzene, reactions 920-46-7, Methacryloyl chloride 1205-64-7 30674-80-7, 2-Isocyanatoethyl methacrylate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT 397247-44-8P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(deprotection of; carbazole derivative and polymer for hole-transporting material in electroluminescent device)

IT 397247-46-0P 397247-47-1P  
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polymerization of; carbazole derivative and polymer for hole-transporting material in electroluminescent device)

L7 ANSWER 62 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2002:102594 HCAPLUS  
DN 136:326093  
TI Photoaddressable alignment layers for fluorescent polymers in polarized electroluminescence devices  
AU Sainova, Dessislava; Zen, Achmad; Nothofer, Heinz-Georg; Asawapirom, Udom; Scherf, Ullrich; Hagen, Rainer; Bieringer, Thomas; Kostromine, Serguei; Neher, Dieter  
CS Institute of Physics, University of Potsdam, Potsdam, D-14469, Germany  
SO Advanced Functional Materials (2002), 12(1), 49-57  
CODEN: AFMDC6; ISSN: 1616-301X  
PB Wiley-VCH Verlag GmbH  
DT Journal  
LA English  
AB Liquid-crystalline (LC) polyfluorenes were successfully aligned on photoaddressable polymers (PAPs) based on polyacrylates with mesogen or non-mesogen azobenzene side chains. The degree of mol. alignment in the fluorescent polyfluorene layer on top of an ultra-thin PAP layer is shown to depend strongly on the chemical nature of the PAP. Good alignment with dichroic ratios of more than 10 was achieved with PAPs containing liquid-crystalline side chains. Patterning with laterally structured alignment was realized in several ways, utilizing reorientation with orthogonally polarized light. Thin PAP layers were evaluated as hole-conducting alignment layers in polymer light-emitting diodes (LEDs) with polarized emission. Hole transport through the alignment layer was facilitated by different concns. of a hole-transporting mol. (HTM) mixed into the PAP layer. These hole-conducting alignment layers retained their aligning ability even at HTM concns. of 20%. LEDs with photometric polarization ratios in emission of up to 14 at a brightness of up to 200 cd/m2 and an efficiency of 0.3 cd/A could be realized.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Photoaddressable alignment layers for fluorescent polymers in polarized electroluminescence devices  
SO Advanced Functional Materials (2002), 12(1), 49-57

CODEN: AFMDC6; ISSN: 1616-301X

IT Electroluminescent devices  
(light-emitting diodes; polyfluorene liquid crystal alignment on photoaddressable polyacrylate and response of LEDs)

IT Hole transport  
Liquid crystals, polymeric  
Luminescence, electroluminescence  
Molecular reorientation  
Optical absorption  
Polarized fluorescence  
(polyfluorene liquid crystal alignment on photoaddressable polyacrylate and response of LEDs)

IT 200261-73-0  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(polyfluorene liquid crystal alignment on photoaddressable polyacrylate and response of LEDs)

L7 ANSWER 63 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:745723 HCAPLUS

DN 135:310673

TI Organic electroluminescent devices

IN Sugiura, Hisanori; Hisada, Hitoshi; Sato, Tetsuya; Matsuo, Mikiko

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2001284052  | A    | 20011012 | JP 2000-101930  | 20000404 <-- |
| PRAI | JP 2000-101930 |      | 20000404 |                 |              |

AB The devices comprise: a pair of anode and a cathode interposing an organic laminate including a light-emitting layer containing a copolymer of a 1st monomer having an electron transporting mol. and a 2nd monomer having a phosphor mol.

TI Organic electroluminescent devices

PI JP 2001284052 A 20011012

|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|----|--|------|----------|-----------------|--------------|
| PI | JP 2001284052  | A    | 20011012 | JP 2000-101930  | 20000404 <-- |
| ST | org electroluminescent copolymer phosphor electron transport |      |          |                 |              |
| IT | Electric transport properties                                |      |          |                 |              |

Electrodes

Phosphors

Pigments, nonbiological

Semiconductor lasers

(organic electroluminescent devices)

IT Electroluminescent devices

(organic; organic electroluminescent devices)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 15082-28-7  
16998-91-7 50926-11-9, ITO 65181-78-4 366464-03-1 366464-06-4  
366464-08-6 366464-11-1 366464-13-3 366464-14-4 366464-15-5  
366464-17-7 366464-19-9 366464-20-2  
366464-21-3 366478-95-7 366478-98-0 366479-00-7  
366479-01-8 366479-02-9

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent devices)

L7 ANSWER 64 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:598427 HCAPLUS

DN 135:183257

TI Method of producing ion conductive laminate for electrolyte application in

electrochemical cells  
 IN Takeuchi, Masataka; Naijo, Shuichi; Ohkubo, Takashi; Yotsuyanagi, Junji;  
 Hirata, Motoyuki  
 PA Japan  
 SO U.S. Pat. Appl. Publ., 46 pp., Cont.-in-part of U.S. Ser. No. 822,465,  
 abandoned.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 2

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|------|--|------|----------|-----------------|--------------|
| PI   | US 2001014420  | A1   | 20010816 | US 1997-946850  | 19971008 <-- |
|      | US 6306509   | B2   | 20011023 |                 |              |
|      | WO 9735351   | A1   | 19970925 | WO 1997-JP944   | 19970321 <-- |
|      | W: CA, CN, KR, SG, US  |      |          |                 |              |
|      | RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                 |              |
| PRAI | JP 1996-93682  | A    | 19960321 |                 |              |
|      | US 1996-14567P   | P    | 19960401 |                 |              |
|      | US 1997-822465   | B2   | 19970321 |                 |              |
|      | WO 1997-JP944  | A2   | 19970321 |                 |              |

AB A laminate comprises an ion conductive material having excellent ion conductivity at room temperature or at lower temps., a small water content, sufficiently high mech. strength and storage stability to allow for handling the ion conductive material in practice, and a form which is easily integrated into an electrochem. element or electrochem. devices. Also disclosed is a production method thereof, and a method of producing a battery, a capacitor or an electrochem. element or apparatus using the laminate. The laminate comprises an intermediate layer of an ion conductive material having on the upper and lower portions thereof outer layers having an ion conductivity lower than that of the intermediate layer. Furthermore, at least one of the outer layers is a layer comprising a non-electron-conductive material.

|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|----|--|------|----------|-----------------|--------------|
| PI | US 2001014420  | A1   | 20010816 |                 |              |
| PI | US 2001014420  | A1   | 20010816 | US 1997-946850  | 19971008 <-- |
|    | US 6306509   | B2   | 20011023 |                 |              |
|    | WO 9735351   | A1   | 19970925 | WO 1997-JP944   | 19970321 <-- |
|    | W: CA, CN, KR, SG, US  |      |          |                 |              |
|    | RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                 |              |

IT Electroluminescent devices  
 (electrochem.; method of producing ion conductive laminate for electrolyte application in electrochem. cells)  
 IT 1314-35-8P, Tungsten trioxide, uses 12190-79-3P, cobalt lithium oxide colio2 21324-40-3P, Lithium hexafluorophosphate 25233-30-1P, Polyaniline 25721-76-0DP, Polyethylene glycol dimethacrylate, lithium complexes 25749-57-9DP, Acrylonitrile-methacrylic acid copolymer, lithium complexes 106769-84-0P, Cadmium selenide telluride 118889-33-1DP, alkali metal complexes 355005-92-4DP, lithium complexes

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(method of producing ion conductive laminate for electrolyte application in electrochem. cells)  
 IT 7439-93-2DP, Lithium, polymer complexes, uses 7440-23-5DP, Sodium, polymer complexes, uses 196618-28-7DP, alkali metal complexes 355010-46-7DP, alkali metal complexes  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (method of producing ion conductive laminate for electrolyte application in electrochem. cells)

L7 ANSWER 65 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2001:155342 HCAPLUS  
 DN 135:67952  
 TI Mechanism of electroluminescence in dye doped thiophene based  
 conjugated polymer  
 AU Kaur, Amarjeet; Cazeca, Mario J.; Chittibabu, K. G.; Kumar, Jayant;  
 Tripathy, Sukant K.  
 CS Departments of Chemistry and Physics, Center for Advanced Materials,  
 University of Massachusetts, Lowell, MA, 01854, USA  
 SO Journal of Applied Physics (2001), 89(6), 3250-3255  
 CODEN: JAPIAU; ISSN: 0021-8979  
 PB American Institute of Physics  
 DT Journal  
 LA English  
 AB The optical and elec. properties of polymer light emitting diodes based on  
 poly[2-(3-thienyl)-ethanol-butoxy-carbonyl-methyl-urethane] as emitting  
 layer were studied. The diode structures were made by using In Sn oxide  
 coated glass as an anode and Al as a cathode. Polyaniline and  
 tris(8-hydroxy-quinolinato) Al were employed as hole and electron  
 transport layers, resp. Enhanced electroluminescence (EL) near  
 the turn-on voltage was observed on addition of  
 4-dicyanomethylene-2-methyl-6-(p-  
 dimethylaminostyryl)-4H-pyran dye. From current-voltage,  
 luminance-voltage, capacitance-voltage, and impedance measurements, an  
 attempt was made to understand the mechanism of EL emission in these  
 polymeric light emitting diodes.  
 RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT  
 TI Mechanism of electroluminescence in dye doped thiophene based  
 conjugated polymer  
 SO Journal of Applied Physics (2001), 89(6), 3250-3255  
 CODEN: JAPIAU; ISSN: 0021-8979  
 AB The optical and elec. properties of polymer light emitting diodes based on  
 poly[2-(3-thienyl)-ethanol-butoxy-carbonyl-methyl-urethane] as emitting  
 layer were studied. The diode structures were made by using In Sn oxide  
 coated glass as an anode and Al as a cathode. Polyaniline and  
 tris(8-hydroxy-quinolinato) Al were employed as hole and electron  
 transport layers, resp. Enhanced electroluminescence (EL) near  
 the turn-on voltage was observed on addition of  
 4-dicyanomethylene-2-methyl-6-(p-  
 dimethylaminostyryl)-4H-pyran dye. From current-voltage,  
 luminance-voltage, capacitance-voltage, and impedance measurements, an  
 attempt was made to understand the mechanism of EL emission in these  
 polymeric light emitting diodes.  
 ST electroluminescence dye dopant thiophene conjugated polymer  
 IT Band structure  
 Electric current-potential relationship  
 Electric impedance  
 Electroluminescent devices  
 Electron-hole recombination  
 Luminescence, electroluminescence  
 (mechanism of electroluminescence in dye doped thiophene  
 based conjugated polymer)  
 IT 7429-90-5, Aluminum, uses 50926-11-9, Indium tin oxide  
 RL: DEV (Device component use); USES (Uses)  
 (mechanism of electroluminescence in dye doped thiophene  
 based conjugated polymer)  
 IT 2085-33-8, Aluminum tris(8-hydroxy-quinolinato) 25233-30-1, Polyaniline  
 51325-91-8, 4-Dicyanomethylene-2-methyl-6-(p-dimethylaminostyryl)-4H-pyran  
 182691-54-9  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (mechanism of electroluminescence in dye doped thiophene

based conjugated polymer)

L7 ANSWER 66 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:129765 HCAPLUS

DN 134:185757

TI Luminescent material and luminescent component

IN Tsukada, Yoshihisa; Adegawa, Yutaka

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 23 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2001049247  | A    | 20010220 | JP 1999-224074  | 19990806 <-- |
| PRAI | JP 1999-224074 |      | 19990806 |                 |              |

AB The invention refers to an electroluminescent material and device containing the compound  $[CH_2CR_3(L_1)q(X_1)r(L_2)sAr_1C(Ar_2):CR_1Ar_3-CR_2:C-Ar_3Ar_4]_p$  [ $Ar_{1,3}$  = arylene, divalent heterocyclic, or a combination thereof;  $Ar_{2,4,5}$  = H, aryl, or heterocyclic;  $R_{1,2}$  = H, cyano, alkyl, alkoxy, alkylthio, aryloxy, arylthio, heterocyclic, oxyheterocyclic, or thioheterocyclic;  $R_3$  = H, halo, alkyl, or aryl;  $p \geq 1$ ;  $L_{1,2}$  = divalent linking group;  $X_1$  = alkylene, arylene, divalent heterocyclic, or  $-R_4(OR_5)t-$ ;  $q,r,s = 0, 1$ ;  $R_{4,5}$  = alkylene;  $t \geq 1$ ].

|    | PATENT NO.      | KIND | DATE     | APPLICATION NO. | DATE |
|----|-----------------|------|----------|-----------------|------|
| PI | JP 2001049247 A |      | 20010220 |                 |      |

|    |               |   |          |                |              |
|----|---------------|---|----------|----------------|--------------|
| PI | JP 2001049247 | A | 20010220 | JP 1999-224074 | 19990806 <-- |
|----|---------------|---|----------|----------------|--------------|

AB The invention refers to an electroluminescent material and device containing the compound  $[CH_2CR_3(L_1)q(X_1)r(L_2)sAr_1C(Ar_2):CR_1Ar_3-CR_2:C-Ar_3Ar_4]_p$  [ $Ar_{1,3}$  = arylene, divalent heterocyclic, or a combination thereof;  $Ar_{2,4,5}$  = H, aryl, or heterocyclic;  $R_{1,2}$  = H, cyano, alkyl, alkoxy, alkylthio, aryloxy, arylthio, heterocyclic, oxyheterocyclic, or thioheterocyclic;  $R_3$  = H, halo, alkyl, or aryl;  $p \geq 1$ ;  $L_{1,2}$  = divalent linking group;  $X_1$  = alkylene, arylene, divalent heterocyclic, or  $-R_4(OR_5)t-$ ;  $q,r,s = 0, 1$ ;  $R_{4,5}$  = alkylene;  $t \geq 1$ ].

ST electroluminescent device phosphor polymer

IT Phosphors

(electroluminescent; luminescent material and luminescent component)

IT Electroluminescent devices

(luminescent material and luminescent component)

IT 155090-83-8, Baytron P 326592-44-3 326592-51-2 326592-59-0  
326592-63-6 326592-71-6 326592-78-3 326592-85-2  
326592-91-0 326592-97-6

RL: DEV (Device component use); USES (Uses)

(luminescent material and luminescent component)

L7 ANSWER 67 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2000:764529 HCAPLUS

DN 134:93077

TI Light-emitting electrochemical cell (LEC) using polythiophene derivative

AU Han, Eun-Mi; Gu, Hal-Bon; Jin, Sung-Ho; Lee, Seok-Hee; Moon, Seong-Bae;

Kim, Woo-Hong; Lee, Kwang-Sik

CS Dept. of Chem. Eng., Chonnam National University, Kwangju, 500-757, S. Korea

SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (2000), 349, 467-470

CODEN: MCLCE9; ISSN: 1058-725X

PB Gordon & Breach Science Publishers

DT Journal

LA English

AB Solid-state polymer light-emitting electrochem. cells were fabricated using thin films of blends of polymer electrolytes and urethane-containing polythiophene (PURET) as active material. The authors prepared various types of polymer electrolytes such as poly(acrylate)s and poly(ether ester)s. The devices emit orange-red light with the maximum intensity at 590 nm at room temperature. The typical voltage (V) - c.d. (I) - luminance characteristics of an ITO/PURET + polymer electrolyte complexed with LiClO<sub>4</sub>/Al cell under forward and reverse bias conditions were measured. The I-V curve is sym. at zero bias. The apparent threshold voltages for current injection and visible light emission are .apprx.2-3V.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (2000), 349; 467-470  
CODEN: MCLCE9; ISSN: 1058-725X

IT Electroluminescent devices  
(light-emitting electrochem. cell using polythiophene derivative)

IT Electric current-potential relationship  
Luminescence  
Luminescence, electroluminescence  
UV and visible spectra  
(of light-emitting electrochem. cell using polythiophene derivative)

IT 9003-01-4, Poly(acrylic acid) 25213-88-1 25322-68-3, Poly(ethylene oxide) 25776-26-5 182691-54-9  
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
(polythiophene derivative based light-emitting electrochem. cell using)

L7 ANSWER 68 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2000:601334 HCAPLUS  
DN 133:315364  
TI Two-layer light emitting diodes prepared by the sol-gel route  
AU De Morais, Tony Dantas; Chaput, Frederic; Boilot, Jean-Pierre; Lahlil, Khalid; Darracq, Bruno; Levy, Yves  
CS Groupe de chimie du solide, Laboratoire de physique de la matiere condensee, UMR CNRS 7643, Ecole polytechnique, Palaiseau, 91128, Fr.  
SO Comptes Rendus de l'Academie des Sciences, Serie IV: Physique, Astrophysique (2000), 1(4), 479-491  
CODEN: CRACFI  
PB Editions Scientifiques et Medicales Elsevier  
DT Journal  
LA English

AB Green-emitting organic-inorg. hybrid light-emitting diodes (HLED) were formed of two hybrid thin layers, exhibiting different functionalities, which are sandwiched between indium-tin oxide (ITO) and metallic electrodes. The layers were prepared from silane precursors modified with hole transporting units and light-emitting naphthalimide moieties by the sol-gel technique. The hole transporting sol-gel layers exhibit about the same charge mobility as organic polymers having equivalent active units. The maximum external quantum efficiency of the best diode using LiF/Al cathode was about 1% and the luminance reaches 4000 cd·m<sup>-2</sup>.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Comptes Rendus de l'Academie des Sciences, Serie IV: Physique, Astrophysique (2000), 1(4), 479-491  
CODEN: CRACFI

IT Electroluminescent devices  
Semiconductor device fabrication  
Sol-gel processing  
(two-layer light-emitting diodes prepared by sol-gel route)

IT 301651-55-8P 301651-57-0P 301651-59-2P 301651-61-6P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic

preparation); PREP (Preparation); USES (Uses)  
(two-layer light-emitting diodes prepared by sol-gel route)

L7 ANSWER 69 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2000:546880 HCAPLUS  
DN 133:335745

TI The interaction of aluminum with a urethane-substituted polythiophene with electroluminescence applications

AU Seung, H. Y.; Whitten, J. E.

CS Department of Chemistry and Center for Advanced Materials, University of Massachusetts Lowell, Lowell, MA, 01854, USA

SO Synthetic Metals (2000), 114(3), 305-312

CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier Science S.A.

DT Journal

LA English

AB The interaction of aluminum with spin-cast films of poly[2(3-thienyl)ethanol n-butoxycarbonylmethylurethane]; a polythiophene having a hydrogen-bond-forming urethane side chain, has been studied by XPS (XPS). The aluminum was evaporated in situ under ultra-high vacuum conditions, and changes in the Al(2p), C(1s), O(1s), N(1s) and S(2p) electronic levels were monitored as a function of aluminum coverage. O(1s) and N(1s) shifts to lower binding energies indicate that initially deposited aluminum preferentially bonds with oxygen atoms of the urethane side-chain, transferring electrons to it. Interaction with the side-chain is so strong that it prevents electron donation into the thiophene ring, as evidenced by a lack of aluminum-induced S(2p) features. This is in contrast to reactive metal deposition on aliphatic-substituted polythiophenes, such as poly(3-hexylthiophene). Al(2p) spectra show that the metal in contact with the polymer electronically resembles that of aluminum oxide, but deposition beyond about  $4 \times 10^{15}$  Al/cm<sup>2</sup> leads to metallic aluminum. Comparison of aluminum intensities on the polymer with aluminum on gold suggest limited diffusion of metal into the bulk.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI The interaction of aluminum with a urethane-substituted polythiophene with electroluminescence applications

SO Synthetic Metals (2000), 114(3), 305-312

CODEN: SYMEDZ; ISSN: 0379-6779

ST interaction aluminum urethane side chain polythiophene electroluminescence

IT Binding energy

Electric current-potential relationship

Electroluminescent devices

Electron transfer

Interface

Luminescence, electroluminescence

X-ray photoelectron spectra

(interaction of aluminum with a urethane-substituted polythiophene with electroluminescence applications)

IT 7429-90-5, Aluminum, properties 182691-54-9,

2-(3-Thienyl)ethanol butoxycarbonylmethylurethane homopolymer

RL: PRP (Properties)

(interaction of aluminum with a urethane-substituted polythiophene with electroluminescence applications)

L7 ANSWER 70 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 2000:417283 HCAPLUS  
DN 133:135636

TI Fluorescence property of two naphthalimide derivatives and their polymers

AU Yan, Xiao-Li; Xu, Chao-Chou; Zheng, Min; Bai, Feng-Lian

CS Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SO Ganguang Kexue Yu Guang Huaxue (2000), 18(2), 112-120  
 CODEN: GKKHE9; ISSN: 1000-3231

PB Kexue Chubanshe  
 DT Journal  
 LA Chinese

AB Two derivs. of 4-amino-1,8 naphthalimide were synthesized. Their photophys. properties were studied in various solvents. Both of their absorption and emission spectra showed a red shift as the polarity of solvents increased. But due to their different mol. structure, their photophys. properties showed some difference. The possibility of synthesizing colored copolymers by copolymn. with Me methacrylate and N-vinylcarbazole including naphthalimide luminophores was investigated. The photophys. properties of the copolymers were studied and it showed little change in the fluorescence properties of copolymers compared with monomers. The fluorescence quenching mechanism between the two monomers and C60 were also studied, the strong quenching may be caused by photoinduced charge transfer and  $\pi$ - $\pi$  conjugated system interaction between luminophores and C60. Further studies of their potential applications in organic electroluminescence fields were going on.

SO Ganguang Kexue Yu Guang Huaxue (2000), 18(2), 112-120  
 CODEN: GKKHE9; ISSN: 1000-3231

AB Two derivs. of 4-amino-1,8 naphthalimide were synthesized. Their photophys. properties were studied in various solvents. Both of their absorption and emission spectra showed a red shift as the polarity of solvents increased. But due to their different mol. structure, their photophys. properties showed some difference. The possibility of synthesizing colored copolymers by copolymn. with Me methacrylate and N-vinylcarbazole including naphthalimide luminophores was investigated. The photophys. properties of the copolymers were studied and it showed little change in the fluorescence properties of copolymers compared with monomers. The fluorescence quenching mechanism between the two monomers and C60 were also studied, the strong quenching may be caused by photoinduced charge transfer and  $\pi$ - $\pi$  conjugated system interaction between luminophores and C60. Further studies of their potential applications in organic electroluminescence fields were going on.

ST naphthalimide MMA vinyl carbazole copolymer prepn; fluorescence electroluminescence emission spectra polymer naphthalimide

IT Dyes  
 Electron transfer  
 Fluorescence quenching  
 Glass transition temperature  
 Luminescence, electroluminescence  
 Molecular structure  
 Polydispersity  
 Solvent effect  
 (preparation and property of two naphthalimide derivs. and polymers)

IT 286404-27-1P 286404-29-3P 286404-30-6P  
 286404-31-7P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and fluorescence property of two naphthalimide derivs. and polymers)

L7 ANSWER 71 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2000:392828 HCAPLUS  
 DN 133:31059  
 TI Polymers based on vinyl units and use thereof in electroluminescent devices  
 IN Chen, Yun; Kohler, Burkhard; Wehrmann, Rolf; Elschner, Andreas; Dujardin, Ralf  
 PA Bayer AG, Germany  
 SO U.S., 22 pp., Cont.-in-part of U.S. 5,891,975.  
 CODEN: USXXAM  
 DT Patent



LA English

FAN.CNT 2

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|------------------|------|----------|------------------|--------------|
| PI   | US 6075106       | A    | 20000613 | US 1996-703797   | 19960827 <-- |
|      | DE 19511484      | A1   | 19961002 | DE 1995-19511484 | 19950329 <-- |
|      | US 5891975       | A    | 19990406 | US 1996-618773   | 19960320 <-- |
| PRAI | DE 1995-19511484 | A    | 19950329 |                  |              |
|      | US 1996-618773   | A2   | 19960320 |                  |              |

AB The present invention relates to (co)polymers which contain at least one repeat chain unit selected from the group comprising I, II, III, where R1, R3 and R4 mutually independently mean hydrogen or C1-6 alkyl, R2 means hydrogen, C1-30 alkyl, C6-18 aryl or C1-30 alkoxy, M denotes CN, C1-30 alkoxy-carbonyl, C1-30 (di)alkylaminocarbonyl or C1-30 alkylcarbonyl, which may each be substituted by hydroxy or C1-6 alkoxy-carbonyl, and furthermore denotes Ph, naphthyl, anthracenyl, pyridinyl or carbazolyl, which may each be substituted by residues selected from the group consisting of halogen, hydroxy, silyl, C1-30 alkyl, C6-18 aryl, C1-30 alkoxy, C1-30 alkoxy-carbonyl, C1-30 acyloxy, and C1-30 alkylcarbonyl, Y represents oxygen, sulfur or --NRO-- wherein Ro means hydrogen or C1-6-alkyl, k means 0 or 1, A1 and A2 mutually independently mean C6-18 arylene or C1-30 alkylene, the aliphatic carbon chain of which may be interrupted by one to three heteroatoms such as oxygen or sulfur and/or by one to two optionally C1-6 alkyl-substituted phenylenes or naphthylenes and L1 and L2 mutually independently mean a photoluminescent residue. A polymer was prepared by reaction of m-(2-Isocyanatoprop-2-yl)- $\alpha$ -methylstyrene-m-methylstyrene-p-methylstyrene copolymer and 3-(6-hydroxyhexoxy carbonyl)-7-diethyl-aminocoumarin.

RE.CNT 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Polymers based on vinyl units and use thereof in electroluminescent devices

PI US 6075106 A 20000613

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE         |
|----|-------------|------|----------|------------------|--------------|
| PI | US 6075106  | A    | 20000613 | US 1996-703797   | 19960827 <-- |
|    | DE 19511484 | A1   | 19961002 | DE 1995-19511484 | 19950329 <-- |
|    | US 5891975  | A    | 19990406 | US 1996-618773   | 19960320 <-- |

ST vinyl polymer photoluminescent residue electroluminescent device; coumarin deriv electroluminescent polymer

IT Electroluminescent devices

(polymers based on vinyl units and use thereof in electroluminescent devices)

IT 183208-99-3P, Bis-(6-hydroxyhexyl) malonate

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(polymers based on vinyl units and use thereof in electroluminescent devices)

IT 95861-88-4DP, reaction products with 3-[(N-hydroxyethyl-N-methyl)amino-carbonyl]-7-diethylaminocoumarin 120439-94-3DP, reaction products with N-(4-n-butylphenyl)-4-(N'-methyl-N'-hydroxyethyl)amino-1,8-naphthalimide 178551-21-8DP, reaction products with m-(2-isocyanato-prop-2-yl)- $\alpha$ -methylstyrene-N-vinylcarbazole copolymer 181373-37-5DP, reaction products with 2-isocyanatoethyl methacrylate-N-vinylcarbazole copolymer 181474-94-2DP, reaction products with m-(2-isocyanatoprop-2-yl)- $\alpha$ -methylstyrene-m-methylstyrene-p-methylstyrene copolymer 181474-95-3DP, reaction products with Bu acrylate-m-(2-isocyanatoprop-2-yl)- $\alpha$ -methylstyrene copolymer 183208-96-0DP, reaction products with 3-(6-hydroxyhexoxy carbonyl)-7-diethyl-aminocoumarin 183209-01-0DP, 2-Isocyanatoethyl methacrylate-N-vinylcarbazole copolymer, reaction products with 4/5-(N-methyl-N-hydroxyethyl)amino-1,8-naphthoylene-1',2'-benzimidazole

RL: IMF (Industrial manufacture); TEM (Technical or engineered material)

use); PREP (Preparation); USES (Uses)

(polymers based on vinyl units and use thereof in electroluminescent devices)

IT 104-13-2, 4-n-Butyl-aniline 105-53-3, Diethyl malonate 109-83-1,  
2-(Methylamino)ethanol 4053-08-1, 4-Chloro-1,8-naphthalic anhydride  
17754-90-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(polymers based on vinyl units and use thereof in electroluminescent devices)

L7 ANSWER 72 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2000:126882 HCAPLUS

DN 132:294268

TI Carrier transport and high-efficiency electroluminescence  
properties of copolymer thin films

AU Chen, B.; Liu, Y.; Lee, C. S.; Yu, G.; Lee, S. T.; Li, H.; Gambling, W.  
A.; Zhu, D.; Tian, H.; Zhu, W.

CS Centre of Super-Diamond and Advanced Films (COSDAF) & Department of  
Physics and Materials Science, City University of Hong Kong, Hong Kong,  
Peop. Rep. China

SO Thin Solid Films (2000), 363(1,2), 173-177

CODEN: THSFAP; ISSN: 0040-6090

PB Elsevier Science S.A.

DT Journal

LA English

AB A novel copolymer with moieties capable of charge transport and  
electroluminescence was synthesized. The drift mobilities of  
electron and hole in the spin-coated films of the copolymer on silicon  
substrate have been determined by the time-of-flight technique. The shape of  
the photo-current curves obtained for the transport of both electron and  
hole is typical for dispersive transport in organic polymers. Under an elec.  
field strength of  $5.0 \times 10^5$  V/cm, the drift mobility of electron and  
hole is  $4.78 \times 10^{-6}$  and  $3.46 \times 10^{-6}$  cm<sup>2</sup>/V s, resp. A  
high-efficiency electroluminescent device with the bi-layer  
structure of ITO/copolymer/2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4,-  
oxadiazole (PBD) /LiF/Al was fabricated. The device emitted a bright  
blue-green light peaking at wavelength of 496 nm, originating from  
copolymer with a maximum current efficiency of 10 cd/A and a maximum  
luminescence efficiency of 2.9 lm/W at the DC drive voltage of 12 V.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Carrier transport and high-efficiency electroluminescence  
properties of copolymer thin films

SO Thin Solid Films (2000), 363(1,2), 173-177

CODEN: THSFAP; ISSN: 0040-6090

AB A novel copolymer with moieties capable of charge transport and  
electroluminescence was synthesized. The drift mobilities of  
electron and hole in the spin-coated films of the copolymer on silicon  
substrate have been determined by the time-of-flight technique. The shape of  
the photo-current curves obtained for the transport of both electron and  
hole is typical for dispersive transport in organic polymers. Under an elec.  
field strength of  $5.0 \times 10^5$  V/cm, the drift mobility of electron and  
hole is  $4.78 \times 10^{-6}$  and  $3.46 \times 10^{-6}$  cm<sup>2</sup>/V s, resp. A  
high-efficiency electroluminescent device with the bi-layer  
structure of ITO/copolymer/2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4,-  
oxadiazole (PBD) /LiF/Al was fabricated. The device emitted a bright  
blue-green light peaking at wavelength of 496 nm, originating from  
copolymer with a maximum current efficiency of 10 cd/A and a maximum  
luminescence efficiency of 2.9 lm/W at the DC drive voltage of 12 V.

ST electroluminescent polymer device carrier transport;  
electroluminescence polymer film carrier transport

IT Electroluminescent devices

Hole mobility

Luminescence, electroluminescence  
 (carrier transport and high-efficiency electroluminescence  
 properties of copolymer thin films)

IT Electric current carriers  
 (transport; carrier transport and high-efficiency  
 electroluminescence properties of copolymer thin films)

IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses  
 15082-28-7, 2-(4-Biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole  
 50926-11-9, ITO  
 RL: DEV (Device component use); USES (Uses)  
 (LED component; carrier transport and high-efficiency  
 electroluminescence properties of copolymer thin films)

IT 242492-03-1  
 RL: DEV (Device component use); PRP (Properties); TEM (Technical or  
 engineered material use); USES (Uses)  
 (LED component; carrier transport and high-efficiency  
 electroluminescence properties of copolymer thin films)

L7 ANSWER 73 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2000:89573 HCAPLUS

DN 132:144501

TI Manufacture of substrate for display device by transferring conductive  
 paste and firing

IN Ohshige, Saburo; Masaki, Takaki; Yamada, Hiroe

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 2000040462  | A    | 20000208 | JP 1998-207696  | 19980723 <-- |
| PRAI | JP 1998-207696 |      | 19980723 |                 |              |

AB The substrate is manufactured according to the steps; (1) filling a conductive  
 paste comprising metal powders, glass frits, and organic components in  
 concaves for electrode formed on a molding A, (2) transferring the molding  
 A to an intermediate molding to form a molding B, and (3) re-transferring  
 the molding B to a substrate and firing the substrate to form electrodes.  
 Fine patterns are formed easily and the substrate is useful for  
 large-scaled displays.

PI. JP 2000040462 A 20000208

|    | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---------------|------|----------|-----------------|--------------|
| PI | JP 2000040462 | A    | 20000208 | JP 1998-207696  | 19980723 <-- |

IT Electroluminescent devices

Frits

Liquid crystal displays

Plasma display panels

(manufacture of substrate for display device by transferring conductive  
 paste and firing)

IT 9004-57-3, Ethyl cellulose 15625-89-5, Trimethylolpropane triacrylate  
 25086-15-1, Methacrylic acid-methyl methacrylate copolymer 152324-69-1,  
 X 4007 256520-24-8, Methacrylic acid-methyl methacrylate-styrene  
 copolymer salt with dimethylamionethyl methacrylate

RL: DEV (Device component use); TEM (Technical or engineered material  
 use); USES (Uses)

(manufacture of substrate for display device by transferring conductive  
 paste and firing)

L7 ANSWER 74 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:559299 HCAPLUS

DN 132:194739

TI Preparation and properties of luminescent metal-complex containing  
conjugated and non-conjugated polymers  
AU Kim, Jaehyun; Kim, Young-Gi; Chittibabu, Kethinni G.; Cazeca, Mario J.;  
Kim, Dong-Yu; Kumar, Jayant; Tripathy, Sukant K.  
CS Center for Advanced Materials, University of Massachusetts Lowell, Lowell,  
MA, 01854, USA  
SO Polymer Preprints (American Chemical Society, Division of Polymer  
Chemistry) (1999), 40(2), 1237-1238  
CODEN: ACPPAY; ISSN: 0032-3934  
PB American Chemical Society, Division of Polymer Chemistry  
DT Journal  
LA English  
AB Amino-functionalized luminescent europium(III) and ruthenium(II) complexes  
were prepared, and incorporated into conjugated and non-conjugated amorphous  
polymers as side groups. The characteristic strong photoluminescence of  
the metal ions were observed from the polymer solution in THF and methanol.

The  
resulting polymers were solution processable. The  
electroluminescence properties of the polymers have been  
investigated from fabricated Organic The applications of these polymers for  
organic Light Emitting Diodes (OLEDs) are also discussed.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Polymer Preprints (American Chemical Society, Division of Polymer  
Chemistry) (1999), 40(2), 1237-1238  
CODEN: ACPPAY; ISSN: 0032-3934  
AB Amino-functionalized luminescent europium(III) and ruthenium(II) complexes  
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The  
resulting polymers were solution processable. The  
electroluminescence properties of the polymers have been  
investigated from fabricated Organic The applications of these polymers for  
organic Light Emitting Diodes (OLEDs) are also discussed.

IT Electroluminescent devices  
Luminescence  
Luminescence, electroluminescence  
UV and visible spectra

(preparation and properties of luminescent metal-complex containing  
conjugated  
and nonconjugated polymers)

IT 7440-18-8DP, Ruthenium, reaction products with hydrolyzed polythiophene  
derivs., preparation 182691-54-9DP, hydrolyzed, ruthenium  
complexes 260249-78-3P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)  
(preparation and properties of luminescent metal-complex containing  
conjugated  
and nonconjugated polymers)

L7 ANSWER 75 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1999:456096 HCAPLUS  
DN 131:214978

TI Synthesis and luminescence of novel emitting copolymers  
AU Hu, Cheng; Zhu, Weihong; Lin, Wenqiang; Tian, He  
CS Institute of Fine Chemicals, East China University of Science and  
Technology, Shanghai, 200237, Peop. Rep. China  
SO Synthetic Metals (1999), 102(1-3), 1129-1130  
CODEN: SYMEDZ; ISSN: 0379-6779  
PB Elsevier Science S.A.  
DT Journal  
LA English

AB Four novel dyad monomers containing two copolymerizable groups have been synthesized. They were copolymd. with N-vinyl carbazole and would be used as electroluminescent materials, in which there are three functional segments: 1,8-naphthalimide as emitter, oxadiazole as electron-transporting unit and carbazole as hole-transporting segments. The effective intramol. singlet energy transfer from oxadiazole or carbazole to naphthalimide was observed from the emission spectra of the dyad monomers and copolymers.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Synthetic Metals (1999), 102(1-3), 1129-1130  
CODEN: SYMEDZ; ISSN: 0379-6779

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ST oxadiazole naphthalimide pendent acrylate vinylcarbazole copolymer  
synthesis fluorescence electroluminescence

IT Fluorescence  
Luminescence, electroluminescence  
UV and visible spectra  
(synthesis and luminescence of N-vinylcarbazole copolymers with  
acrylates containing oxadiazole and naphthalimide in their side chains)

IT 242492-02-0P 242492-03-1P 242492-04-2P  
242492-05-3P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(synthesis and luminescence of N-vinylcarbazole copolymers with  
acrylates containing oxadiazole and naphthalimide in their side chains)

L7 ANSWER 76 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:436765 HCAPLUS

DN 131:215255

TI Novel Layer-by-layer Complexation Technique and Properties of the  
Fabricated Films

AU Kim, Jaehyun; Wang, Hsing-Chia; Kumar, Jayant; Tripathy, Sukant K.;  
Chittibabu, Kethinni G.; Cazeca, Mario J.; Kim, Woohong

CS Center for Advanced Materials Departments of Chemistry and Physics,  
University of Massachusetts, Lowell, MA, 01854, USA

SO Chemistry of Materials (1999), 11(8), 2250-2256  
CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

AB A novel layer-by-layer complex-fabrication technique for multilayer film assembly was developed by alternatively dipping desired substrates in macromol. ligands and Eu<sup>3+</sup> ion solns. A water-soluble, luminescent thiophene-based polymer, viz., poly[2,5-(3-carboxymethylurethaneylethyl)thiophene] (H-PURET), was prepared and used as the macromol. ligand. Multilayer deposition was monitored using UV-visible spectroscopy by following the absorbance increase due to the deposition of the polymer layer. Multilayer thin films were characterized using IR and fluorescence spectroscopic techniques, transmission electron microscopy (TEM), and energy-dispersive X-ray spectrometry (EDXS). The conductivity and the electroluminescence properties of the conjugated polymer-Eu<sup>3+</sup> complex multilayer films were also measured. The observed electroluminescence intensity of conjugated polymer-metal complex multilayer film was about 2 times higher than for the conjugated polymer by itself. The approach is general in that other macroligands and metal ions may be employed.

RE.CNT 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Chemistry of Materials (1999), 11(8), 2250-2256  
CODEN: CMATEX; ISSN: 0897-4756

AB A novel layer-by-layer complex-fabrication technique for multilayer film assembly was developed by alternatively dipping desired substrates in macromol. ligands and Eu3+ ion solns. A water-soluble, luminescent thiophene-based polymer, viz., poly[2,5-(3-carboxymethylurethaneylethyl)thiophene] (H-PURET), was prepared and used as the macromol. ligand. Multilayer deposition was monitored using UV-visible spectroscopy by following the absorbance increase due to the deposition of the polymer layer. Multilayer thin films were characterized using IR and fluorescence spectroscopic techniques, transmission electron microscopy (TEM), and energy-dispersive X-ray spectrometry (EDXS). The conductivity and the electroluminescence properties of the conjugated polymer-Eu3+ complex multilayer films were also measured. The observed electroluminescence intensity of conjugated polymer-metal complex multilayer film was about 2 times higher than for the conjugated polymer by itself. The approach is general in that other macroligands and metal ions may be employed.

IT Polyanilines  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(electroluminescent devices containing layers with hydrolyzed poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane]; novel layer-by-layer complexation technique and properties of fabricated films)

IT Complexation  
Electric conductivity  
Electroluminescent devices  
Fluorescence  
(novel layer-by-layer complexation technique and properties of fabricated films)

IT 25233-30-1, Polyaniline  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(electroluminescent devices containing layers with hydrolyzed poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane]; novel layer-by-layer complexation technique and properties of fabricated films)

IT 7440-53-1D, Europium, complexes with hydrolyzed poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane], properties 182691-54-9D, Poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane], hydrolyzed, europium complexes  
RL: PRP (Properties)  
(novel layer-by-layer complexation technique and properties of fabricated films)

L7 ANSWER 77 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1999:388815 HCAPLUS  
DN 131:37833  
TI Electroluminescent material  
IN Boilot, Jean Pierre; Chaput, Frederic; Dantas de Moraes, Tony Alberto; Gacoin, Thierry; Lahlil, Khalid  
PA Saint Gobain Vitrage S. A., Fr.  
SO Fr. Demande, 33 pp.  
CODEN: FRXXBL

DT Patent  
LA French

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | FR 2770222    | A1   | 19990430 | FR 1997-13553   | 19971029 <-- |
|      | FR 2770222    | B1   | 20020628 |                 |              |
| PRAI | FR 1997-13553 |      | 19971029 |                 |              |

AB The inventions concerns an electroluminescent material which shows a mineral or organo-mineral matrix in which is incorporated a number of active components of which at least 1 is an electroluminescent emitter.

TI Electroluminescent material

PI FR 2770222 A1 19990430

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |            |    |          |               |              |
|----|------------|----|----------|---------------|--------------|
| PI | FR 2770222 | A1 | 19990430 | FR 1997-13553 | 19971029 <-- |
|    | FR 2770222 | B1 | 20020628 |               |              |

AB The inventions concerns an electroluminescent material which shows a mineral or organo-mineral matrix in which is incorporated a number of active components of which at least 1 is an electroluminescent emitter.

ST electroluminescent screen polymer silsesquioxane sol gel polymn;  
UV silsesquioxane polymer electroluminescent screen;  
fluorescence silsesquioxane polymer electroluminescent screen;  
nanoparticle IIB VIA electroluminescent screen polymer

IT Luminescent screens

Phosphors

(electroluminescent; polymer electroluminescent  
screen material from sol-gel polymerization in relation to silsesquioxanes

and

Group IIB chalcogenide nanoparticles)

IT Electroluminescent devices

Fluorescence

Hole transport

Nanoparticles

Refractive index

UV and visible spectra

(polymer electroluminescent screen material from sol-gel  
polymerization in relation to silsesquioxanes and Group IIB chalcogenide  
nanoparticles)

IT Polymers, preparation

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(polymer electroluminescent screen material from sol-gel  
polymerization in relation to silsesquioxanes and Group IIB chalcogenide  
nanoparticles)

IT Sol-gel processing

(polymerization; polymer electroluminescent screen material from  
sol-gel polymerization in relation to silsesquioxanes and Group IIB  
chalcogenide nanoparticles)

IT Electroluminescent devices

(screens; polymer electroluminescent screen material from  
sol-gel polymerization in relation to silsesquioxanes and Group IIB  
chalcogenide nanoparticles)

IT Silsesquioxanes

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(silicate-; polymer electroluminescent screen material from  
sol-gel polymerization in relation to silsesquioxanes and Group IIB  
chalcogenide nanoparticles)

IT Silicates, preparation

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(silsesquioxane-; polymer electroluminescent screen material  
from sol-gel polymerization in relation to silsesquioxanes and Group IIB  
chalcogenide nanoparticles)

IT Polymerization

(sol-gel; polymer electroluminescent screen material from  
sol-gel polymerization in relation to silsesquioxanes and Group IIB  
chalcogenide nanoparticles)

IT Polycarbonates, uses  
 RL: DEV (Device component use); USES (Uses)  
 (substrate; polymer electroluminescent screen material from  
 sol-gel polymerization in relation to silsesquioxanes and Group IIB  
 chalcogenide nanoparticles)

IT 288-42-6, Oxazole 288-88-0, 1H-1,2,4-Triazole 289-80-5, Pyridazine  
 11120-54-0, Oxadiazole  
 RL: DEV (Device component use); USES (Uses)  
 (electron transport material; polymer electroluminescent  
 screen material from sol-gel polymerization in relation to silsesquioxanes  
 and  
 Group IIB chalcogenide nanoparticles)

IT 226902-75-6P 226902-76-7P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)  
 (electron transport material; polymer electroluminescent  
 screen material from sol-gel polymerization in relation to silsesquioxanes  
 and  
 Group IIB chalcogenide nanoparticles)

IT 172228-76-1P 226902-77-8P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)  
 (hole transport material; polymer electroluminescent screen  
 material from sol-gel polymerization in relation to silsesquioxanes and  
 Group  
 IIB chalcogenide nanoparticles)

IT 1306-23-6, Cadmium sulfide, uses 1306-24-7, Cadmium selenide, uses  
 1314-98-3, Zinc sulfide, uses  
 RL: DEV (Device component use); USES (Uses)  
 (luminescence emitter nanoparticle; polymer electroluminescent  
 screen material from sol-gel polymerization in relation to silsesquioxanes  
 and  
 Group IIB chalcogenide nanoparticles)

IT 219535-34-9P 226902-72-3P 226902-73-4P 226902-74-5P  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)  
 (luminescence emitter; polymer electroluminescent screen  
 material from sol-gel polymerization in relation to silsesquioxanes and  
 Group  
 IIB chalcogenide nanoparticles)

IT 226902-82-5P 226902-83-6P 226902-84-7P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)  
 (polymer electroluminescent screen material from sol-gel  
 polymerization in relation to silsesquioxanes and Group IIB chalcogenide  
 nanoparticles)

IT 52000-75-6P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (polymer electroluminescent screen material from sol-gel  
 polymerization in relation to silsesquioxanes and Group IIB chalcogenide  
 nanoparticles)

IT 81-33-4 106-95-6, Allyl bromide, reactions 109-73-9, Butylamine,  
 reactions 302-01-2, Hydrazine, reactions 531-91-9,  
 n,n'-Diphenylbenzidine 623-05-2, 4-Hydroxybenzyl alcohol 696-62-8,  
 4-Iodoanisole 919-30-2 998-30-1, Triethoxysilane 1710-98-1,  
 p-tert-Butylbenzoyl chloride 2425-95-8 2478-20-8 13036-02-7,  
 Dimethyl-5-hydroxyisophthalate 24463-15-8, 1-Pyrenemethanol 24801-88-5  
 73500-82-0, 9H-Carbazole-9-carbonyl chloride 119438-04-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymer electroluminescent screen material from sol-gel  
 polymerization in relation to silsesquioxanes and Group IIB chalcogenide  
 nanoparticles)



IT 20441-07-0P 21368-39-8P 95689-64-8P 121333-95-7P 226902-78-9P  
226902-79-0P 226902-80-3P 226902-81-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(polymer electroluminescent screen material from sol-gel  
polymerization in relation to silsesquioxanes and Group IIB chalcogenide  
nanoparticles)

IT 9003-01-4, Poly(acrylic acid) 9011-14-7, PMMA  
RL: DEV (Device component use); USES (Uses)  
(substrate; polymer electroluminescent screen material from  
sol-gel polymerization in relation to silsesquioxanes and Group IIB  
chalcogenide nanoparticles)

L7 ANSWER 78 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1999:365184 HCAPLUS  
DN 131:236497

TI Orientation-induced molecular rectification in polymer films: improving  
organic-semiconductor device efficiency

AU Sentein, Carole; Fiorini, Celine; Lorin, Andre; Raimond, Paul; Sicot,  
Lionel; Nunzi, Jean-Michel

CS DEIN, Serv. Phys. Electron., Groupe Composants Organiques, (CEA-Technol.  
Avancees) LETI, Gif Sur Yvette, Fr.

SO Proceedings of SPIE-The International Society for Optical Engineering ( 1999), 3623(Organic Photonic Materials and Devices), 80-89  
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB In the field of organic semiconductor devices, such as  
electroluminescent diodes or photovoltaic cells, a rectifying  
junction is mandatory to improve their efficiency. In order to build  
single polymer film photovoltaic cells, we realize an equivalent distributed  
p-n junction in a polymeric monolayer. For this purpose, we propose an  
interdisciplinary principle derived from the application of nonlinear  
optical techniques to the technol. of polymer semiconductors. We give  
exptl. evidence that mol. rectification induced in an oriented amorphous  
polymer bearing polar chromophores improves efficiency of polymeric  
semiconductor device such as photovoltaic cells. Orientation is performed  
through DC- field ordering of the polar mols. contained in the polymer.  
Second harmonic generation is used as a probe of the mol. order and  
permits optimization of the sample orientation parameters, i.e.,  
orientation-field, sample temperature, poling duration and cooling conditions

to  
achieve the largest stable orientation. Addnl., to establish a model  
which describes charge injection and transport through such device, we  
propose to use Solid Elec. Field Induced Second Harmonic Generation  
(SEFISHG) as an in situ internal field measurement technique. In this  
way, before orientation of the mols., SEFISHG provides the electron work  
function difference between the two electrode materials, and after  
orientation, SEFISHG permits the measure of the internal field stored in  
the structure.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Proceedings of SPIE-The International Society for Optical Engineering ( 1999), 3623(Organic Photonic Materials and Devices), 80-89  
CODEN: PSISDG; ISSN: 0277-786X

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electroluminescent diodes or photovoltaic cells, a rectifying  
junction is mandatory to improve their efficiency. In order to build  
single polymer film photovoltaic cells, we realize an equivalent distributed  
p-n junction in a polymeric monolayer. For this purpose, we propose an  
interdisciplinary principle derived from the application of nonlinear  
optical techniques to the technol. of polymer semiconductors. We give

exptl. evidence that mol. rectification induced in an oriented amorphous polymer bearing polar chromophores improves efficiency of polymeric semiconductor device such as photovoltaic cells. Orientation is performed through DC- field ordering of the polar mols. contained in the polymer. Second harmonic generation is used as a probe of the mol. order and permits optimization of the sample orientation parameters, i.e., orientation-field, sample temperature, poling duration and cooling conditions

to

achieve the largest stable orientation. Addnl., to establish a model which describes charge injection and transport through such device, we propose to use Solid Elec. Field Induced Second Harmonic Generation (SEFISHG) as an in situ internal field measurement technique. In this way, before orientation of the mols., SEFISHG provides the electron work function difference between the two electrode materials, and after orientation, SEFISHG permits the measure of the internal field stored in the structure.

IT 25067-59-8, Poly(9-vinylcarbazole) 119989-05-8

RL: DEV (Device component use); USES (Uses)

(orientation-induced mol. rectification in polymer films and improving organic-semiconductor device efficiency)

L7 ANSWER 79 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:237534 HCAPLUS

DN 130:318177

TI Electroluminescence from the 1,1,4,4-tetraphenyl-1,3-butadiene doped polymeric Langmuir-Blodgett films

AU Huang, Jinman; Yang, Yi; Xue, Shanhua; Yang, Bai; Liu, Shiyong; Shen, Jiacong; Risbud, Subhash H.

CS Department of Chemistry, Key Laboratory of Supramolecular Structure and Spectroscopy, Jilin University, Changchun, 130023, Peop. Rep. China

SO Proceedings of SPIE-The International Society for Optical Engineering (1998), 3476(Organic Light-Emitting Materials and Devices II), 304-309

CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB Dye TPB (1,1,4,4-tetraphenyl-1,3-butadiene) was successfully introduced into polymeric multilayer films by LB (Langmuir-Blodgett) technique without any chemical modification. X-ray diffraction and optical absorption data indicate that the films have ordered structure with a period of .apprx.5.8 nm that is similar to a superlattice. The TPB doped polymeric LB films were used to fabricate an electroluminescence (EL) device that emits in the blue region at room temperature Compared with cast films, the luminescence (PL) and electroluminescence (EL) spectra of the TPB-doped LB films show that the exciton shifts to higher energy and that the full width at half maximum (FWHM) of the emission peak becomes narrower.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Electroluminescence from the 1,1,4,4-tetraphenyl-1,3-butadiene doped polymeric Langmuir-Blodgett films

SO Proceedings of SPIE-The International Society for Optical Engineering (1998), 3476(Organic Light-Emitting Materials and Devices II), 304-309

CODEN: PSISDG; ISSN: 0277-786X

AB Dye TPB (1,1,4,4-tetraphenyl-1,3-butadiene) was successfully introduced into polymeric multilayer films by LB (Langmuir-Blodgett) technique without any chemical modification. X-ray diffraction and optical absorption data indicate that the films have ordered structure with a period of .apprx.5.8 nm that is similar to a superlattice. The TPB doped polymeric LB films were used to fabricate an electroluminescence (EL) device that emits in the blue region at room temperature Compared with cast

films, the luminescence (PL) and electroluminescence (EL) spectra of the TPB-doped LB films show that the exciton shifts to higher energy and that the full width at half maximum (FWHM) of the emission peak becomes narrower.

- ST electroluminescence phenylbutadiene doped polymer Langmuir Blodgett film; butadiene tetraphenyl doped polymer Langmuir Blodgett film electroluminescence; luminescence electro phenylbutadiene doped polymer Langmuir Blodgett film
- IT Langmuir-Blodgett films  
(electroluminescence of tetraphenylbutadiene-doped polymeric)
- IT Exciton  
Luminescence  
Luminescence, electroluminescence  
UV and visible spectra  
X-ray diffraction  
(of tetraphenylbutadiene-doped polymeric Langmuir-Blodgett films)
- IT 25067-59-8, Poly(n-vinylcarbazole) 160883-93-2  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)  
(electroluminescence from Langmuir-Blodgett films of tetraphenylbutadiene-doped)
- IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene  
RL: MOA (Modifier or additive use); USES (Uses)  
(electroluminescence from polymeric Langmuir-Blodgett films doped with)
- L7 ANSWER 80 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1999:236181 HCAPLUS  
DN 131:74523
- TI Change in the emission color and the quantum efficiency enhancement in urethane-substituted polythiophene/tris(8-hydroxyquinoline) aluminum double layer light-emitting devices
- AU Jung, S.-D.; Zyung, T.; Kim, W. H.; Lee, C. J.; Tripathy, S. K.  
CS Electronics and Telecommunications Research Institute, Taejon, S. Korea  
SO Synthetic Metals (1999), 100(2), 223-231  
CODEN: SYMEDZ; ISSN: 0379-6779
- PB Elsevier Science S.A.  
DT Journal  
LA English
- AB We have obtained bright red color from orange-red light emitting urethane-substituted polythiophene (PURET) by placing tris(8-hydroxyquinoline) aluminum (alq3) between the PURET layer and the cathode. Rearrangement of PURET chains or alq3 mols. at the interface induced by the interfacial interaction between PURET and alq3 via hydrogen bond is suggested as a mechanism for the change in the emission color. Light output intensity increased with alq3 film thickness but is insensitive to the PURET film thickness. Combination of the charge blocking effect and the doping induced quantum efficiency enhancement has been performed by annealing the double layer device. Annealing of the double layer device increased further the light output intensity and caused the EL spectrum to shift toward blue, resulting in bright greenish-yellow light emission. In situ absorption and photoluminescence measurements during the annealing process exhibit the diffusion of alq3 mols. into the PURET layer and the formation of a doped region at the interface. Energy transfer from doped alq3 mols. to PURET chains and the doping-induced deformation of PURET chains are examined to occur within the doped region. In this paper, we propose the annealing of polymer/organic double layers as an effective method to improve the quantum efficiency of polymer light-emitting devices.
- RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT
- SO Synthetic Metals (1999), 100(2), 223-231  
CODEN: SYMEDZ; ISSN: 0379-6779
- IT Annealing

Color

Electroluminescent devices

Luminescence, electroluminescence

(change in emission color and quantum efficiency enhancement in urethane-substituted polythiophene/tris(8-hydroxyquinoline) aluminum double layer light-emitting devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 182691-54-9,  
Poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane]  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(change in emission color and quantum efficiency enhancement in urethane-substituted polythiophene/tris(8-hydroxyquinoline) aluminum double layer light-emitting devices)

L7 ANSWER 81 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:225657 HCAPLUS

DN 130:275325

TI Polymerizable fluorene derivatives, their polymers, and electroluminescent devices using them

IN Toshida, Yoshi; Ueno, Kazunori; Senoo, Akihiro; Mashimo, Seiji

PA Canon K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 11092442    | A    | 19990406 | JP 1997-268234  | 19970916 <-- |
|      | JP 3514417     | B2   | 20040331 |                 |              |
|      | US 6017644     | A    | 20000125 | US 1998-152074  | 19980911 <-- |
| PRAI | JP 1997-268234 | A    | 19970916 |                 |              |

AB CH2:CR1CONHCOXRAr1 [I; R1 = H, alkyl, halo; X = NH, O, S; Ar1 = fluorenyl Q; (un)substituted heterocyclyl; R3,R4 = H, alkyl, (un)substituted aryl, (un)substituted heterocyclyl; R5, R6 = H, halo, alkyl, aralkyl, alkoxy, (un)substituted aryl, (un)substituted heterocyclyl] and their polymers [CH2CR1(CONHCOXRAr1)]m (II; m = 2-3000) are claimed. Also claimed is an organic electroluminescent device having  $\geq 1$  organic layers,  $\geq 1$  of which contains  $\geq 1$  I or II. The electroluminescent device shows high luminance at a low voltage application and good durability.

TI Polymerizable fluorene derivatives, their polymers, and electroluminescent devices using them

PI JP 11092442 A 19990406 Heisei

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-------------|------|----------|-----------------|--------------|
| PI | JP 11092442 | A    | 19990406 | JP 1997-268234  | 19970916 <-- |
|    | JP 3514417  | B2   | 20040331 |                 |              |
|    | US 6017644  | A    | 20000125 | US 1998-152074  | 19980911 <-- |

AB CH2:CR1CONHCOXRAr1 [I; R1 = H, alkyl, halo; X = NH, O, S; Ar1 = fluorenyl Q; (un)substituted heterocyclyl; R3,R4 = H, alkyl, (un)substituted aryl, (un)substituted heterocyclyl; R5, R6 = H, halo, alkyl, aralkyl, alkoxy, (un)substituted aryl, (un)substituted heterocyclyl] and their polymers [CH2CR1(CONHCOXRAr1)]m (II; m = 2-3000) are claimed. Also claimed is an organic electroluminescent device having  $\geq 1$  organic layers,  $\geq 1$  of which contains  $\geq 1$  I or II. The electroluminescent device shows high luminance at a low voltage application and good durability.

ST polymerizable fluorene deriv prepn electroluminescent display; methacryloylureidofluorene polymer prepn electroluminescent display; polymethacryloylureidofluorene prepn electroluminescent device

IT Electroluminescent devices

(preparation of polymerizable fluorene derivs., their polymers, and

electroluminescent devices using them)

IT 222049-88-9P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)  
 (preparation of polymerizable fluorene derivs., their polymers, and electroluminescent devices using them)

IT 222049-87-8P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation of polymerizable fluorene derivs., their polymers, and electroluminescent devices using them)

IT 222049-85-6P 222049-86-7P  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of polymerizable fluorene derivs., their polymers, and electroluminescent devices using them)

IT 4474-60-6 28320-37-8 155905-62-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of polymerizable fluorene derivs., their polymers, and electroluminescent devices using them)

L7 ANSWER 82 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:122588 HCAPLUS

DN 130:229731

TI Hybrid organic-inorganic light-emitting diodes

AU Dantas de Morais, Tony; Chaput, Frederic; Lahlil, Khalid; Boilot, Jean-Pierre

CS Groupe Chimie Solide, Laboratoire Physique Matiere Condensee, Ecole Polytechnique, Palaiseau, F-91128, Fr.

SO Advanced Materials (Weinheim, Germany) (1999), 11(2), 107-112

CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB To improve the aging and environmental stability of LEDs, hybrid organic-inorg. materials consisting of 2-3 layers with different functionalities were synthesized using the sol-gel technique. These layers were prepared from silane precursors with hole- or electron-transporting units and light-emitting species. For the emissive layers the authors used Si-DCM prepared by reacting the OH groups of 4-dicyanomethylene-2-Me-6-[p-(dimethylamino)styryl]-4H-pyran (DCM) and the isocyanate group 3-(isocyanatopropyl)triethoxysilane in DMF. SiDCM was copolymd. with methyltriethoxysilane and doped by 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (PBD) or Si-PBD. As hole transport layer polyvinylcarbazole or 9-[3-(1,1,1-triethoxysilyl)propyl]-9H-carbazole + TEOS was used. The electroluminescent properties of the sol-gel materials were demonstrated by manufacturing devices which emitted in the orange consisting of the organic-inorg. multilayer sandwiched between a transparent ITO electrode and an evaporated Al cathode.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Advanced Materials (Weinheim, Germany) (1999), 11(2), 107-112

CODEN: ADVMEW; ISSN: 0935-9648

AB To improve the aging and environmental stability of LEDs, hybrid organic-inorg. materials consisting of 2-3 layers with different functionalities were synthesized using the sol-gel technique. These layers were prepared from silane precursors with hole- or electron-transporting units and light-emitting species. For the emissive layers the authors used Si-DCM prepared by reacting the OH groups of 4-dicyanomethylene-2-Me-6-[p-(dimethylamino)styryl]-4H-pyran (DCM) and the isocyanate group 3-(isocyanatopropyl)triethoxysilane in DMF. SiDCM was copolymd. with methyltriethoxysilane and doped by 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (PBD) or Si-PBD. As hole transport

layer polyvinylcarbazole or 9-[3-(1,1,1-triethoxysilyl)propyl]-9H-carbazole + TEOS was used. The electroluminescent properties of the sol-gel materials were demonstrated by manufacturing devices which emitted in the orange consisting of the organic-inorg. multilayer sandwiched between a transparent ITO electrode and an evaporated Al cathode.

- ST light emitting diode sol gel fabrication; LED org inorg multilayer electroluminescence efficiency; cyanomethylenepyranilylvinylphenylaminoethyl ethoxysilylpropylcarbamate hybrid LED electroluminescence; biphenylphenyl oxadiazole ethoxysilylpropylcarbamate hybrid LED electroluminescence; current voltage LED hybrid org inorg silane precursor
- IT Electroluminescent devices  
(current-voltage-, luminance-voltage characteristics, and luminescence and electroluminescence spectra of hybrid organic-inorg. LEDs fabricated by sol-gel process from silane-based precursors)
- IT Luminescence, electroluminescence  
(spectra; of hybrid organic-inorg. LEDs fabricated by sol-gel process from silane-based precursors)
- IT 221105-35-7  
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
(dopant; current-voltage-, luminance-voltage characteristics, and luminescence and electroluminescence spectra of hybrid organic-inorg. LEDs fabricated by sol-gel process from silane-based precursors)
- IT 25067-59-8, Polyvinylcarbazole  
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(hole transport layer; hybrid organic-inorg. LED sol-gel fabrication and characterization by current-voltage, luminance-voltage, luminescence, and electroluminescence using)
- IT 221105-37-9 221105-39-1 221105-41-5  
RL: DEV (Device component use); USES (Uses)  
(hybrid organic-inorg. LEDs fabricated by sol-gel process from silane-based precursors)

L7 ANSWER 83 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:812217 HCAPLUS

DN 130:125792

TI Enhanced performance of polythiophene derivative based light emitting diodes by addition of europium and ruthenium complexes

AU Cazeca, Mario J.; Chittibabu, Kethinni G.; Kim, Jaehyun; Kumar, Jayant; Jain, Alope; Kim, Woohong; Tripathy, Sukant K.

CS Molecular Technologies, Westford, MA, 01886, USA

SO Synthetic Metals (1998), 98(1), 45-49

CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier Science S.A.

DT Journal

LA English

AB Fabrication of polymer light emitting diodes (PLEDs) from a urethane containing processable polythiophene derivative, poly[2-(3-thienyl)ethanol n-butoxy carbonylmethyl urethane], (PURET) and its composites with luminescent ruthenium (II) and europium (m) complexes is discussed. Enhanced electroluminescence (EL) performance was observed, when 1% by weight of europium (Ei) or ruthenium (II) complexes were added to the PURET polymer. Multilayered devices with polyaniline as a hole injecting layer and tris-8-hydroxyquinoline-aluminum as an electron injecting layer have also been fabricated. PLEDs from PURET polymer have a threshold voltage of 3.6 V and emit an orange-red light with a brightness of about 500 cd/m<sup>2</sup> under forward bias of 9 V, upon the addition of 1% of europium (m) thenoyl trifluoroacetate complex to the polymer.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Synthetic Metals (1998), 98(1), 45-49  
CODEN: SYMEDZ; ISSN: 0379-6779

AB Fabrication of polymer light emitting diodes (PLEDs) from a urethane containing processable polythiophene derivative, poly[2-(3-thienyl)ethanol n-butoxy carbonylmethyl urethane], (PURET) and its composites with luminescent ruthenium (II) and europium (m) complexes is discussed. Enhanced electroluminescence (EL) performance was observed, when 1% by weight of europium (Eu) or ruthenium (II) complexes were added to the PURET polymer. Multilayered devices with polyaniline as a hole injecting layer and tris-8-hydroxyquinoline-aluminum as an electron injecting layer have also been fabricated. PLEDs from PURET polymer have a threshold voltage of 3.6 V and emit an orange-red light with a brightness of about 500 cd/m<sup>2</sup> under forward bias of 9 V, upon the addition of 1% of europium (m) thenoyl trifluoroacetate complex to the polymer.

ST polythiophene composite LED europium ruthenium complex;  
electroluminescence polythiophene LED europium ruthenium

IT Electroluminescent devices  
(enhanced performance of polythiophene derivative-based light emitting diodes by addition of europium and ruthenium complexes)

IT Luminescence  
Luminescence, electroluminescence  
(performance of polythiophene derivative-based light emitting diodes containing europium and ruthenium complexes)

IT 182691-54-9  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(enhanced performance of polythiophene derivative-based light emitting diodes by addition of europium and ruthenium complexes)

L7 ANSWER 84 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:781508 HCAPLUS

DN 130:145590

TI Temperature dependent photoluminescence and electroluminescence properties of polythiophene with hydrogen bonding side chain

AU Jung, S.-D.; Hwang, D.-H.; Zyung, T.; Kim, W. H.; Chittibabu, K. G.; Tripathy, S. K.

CS Electronics and Telecommunications Research Institute, Taejon, 305-600, S. Korea

SO Synthetic Metals (1998), 98(2), 107-111  
CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier Science S.A.

DT Journal

LA English

AB The authors have studied the temperature dependent optical absorption, photoluminescence (PL) and electroluminescence (EL) properties of a highly soluble and H-bond forming polythiophene with a urethane side chain, poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane] (PURET). PURET shows the thermochromism and the temperature dependence in EL and PL spectra. Within a limited temperature range, the EL and PL intensities increase with increasing temperature and this is attributed to the thermally induced deformation of the ordered portion in polymer chain.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Temperature dependent photoluminescence and electroluminescence properties of polythiophene with hydrogen bonding side chain

SO Synthetic Metals (1998), 98(2), 107-111  
CODEN: SYMEDZ; ISSN: 0379-6779

AB The authors have studied the temperature dependent optical absorption, photoluminescence (PL) and electroluminescence (EL) properties of a highly soluble and H-bond forming polythiophene with a urethane side chain, poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane] (PURET). PURET shows the thermochromism and the temperature dependence in EL and PL

spectra. Within a limited temperature range, the EL and PL intensities increase with increasing temperature and this is attributed to the thermally induced deformation of the ordered portion in polymer chain.

ST temp luminescence electroluminescence polythiophene deriv;  
hydrogen bonding side chain polymer photoluminescence

IT Hydrogen bond  
Luminescence  
Luminescence, electroluminescence  
Optical absorption  
Thermochromism  
(temperature dependent photoluminescence and electroluminescence properties of polythiophene with hydrogen bonding side chain)

IT 182691-54-9, Poly[2-(3-thienyl)ethanol-n-butoxycarbonylmethylurethane]  
RL: PRP (Properties)  
(temperature dependent photoluminescence and electroluminescence properties of polythiophene with hydrogen bonding side chain)

L7 ANSWER 85 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1998:743698 HCAPLUS  
DN 130:81938  
TI Detection of photopolymerization processes of diacetylenic Langmuir-Blodgett films on a core of plastic optical fiber as a light-emitting diode signal change  
AU Higashi, Nobuyuki; Kato, Tomoki; Niwa, Masazo  
CS Department of Molecular Science & Technology, Faculty of Engineering, Doshisha University, Kyoto, 610-0321, Japan  
SO Polymer Journal (Tokyo) (1998), 30(11), 935-937  
CODEN: POLJB8; ISSN: 0032-3896  
PB Society of Polymer Science, Japan  
DT Journal  
LA English  
AB The photopolymn. of diacetylene ammonium lipid LB film monolayers deposited on plastic optical fibers (POF) was detected based on an optical signal measurement of a light-emitting diode. The optical intensity decreases steeply and levels off after about 90 s; this is linked to changes in the refractive index and color phases as polydiacetylene is formed. The effect was observed for monolayers subjected to simple compression and to four compression-expansion cycles.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Polymer Journal (Tokyo) (1998), 30(11), 935-937  
CODEN: POLJB8; ISSN: 0032-3896

IT Compression  
Electroluminescent devices  
Langmuir-Blodgett films  
Optical absorption  
Refractive index  
(photopolymn. of diacetylenic ammonium lipid LB monolayer on plastic optical fiber monitored via light-emitting diode signal change)

IT 121225-82-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(photopolymn. of diacetylenic ammonium lipid LB monolayer on plastic optical fiber monitored via light-emitting diode signal change)

L7 ANSWER 86 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1998:685125 HCAPLUS  
DN 129:323911  
TI Antireflection films and image display device containing the same  
IN Yasuda, Tomokazu; Nakamura, Kenichi; Nakamura, Taku; Nakamura, Kazuhiro  
PA Fuji Photo Film Co., Ltd., Japan  
SO PCT Int. Appl., 80 pp.



CODEN: PIXXD2

DT Patent  
LA Japanese  
FAN.CNT 3

|      | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---|------|----------|-----------------|--------------|
| PI   | WO 9845734  | A1   | 19981015 | WO 1998-JP1576  | 19980406 <-- |
|      | W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, GW, HU, ID, IL, IS, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |      |          |                 |              |
|      | RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG  |      |          |                 |              |
|      | AU 9865231  | A    | 19981030 | AU 1998-65231   | 19980406 <-- |
|      | JP 11006902   | A    | 19990112 | JP 1998-110173  | 19980406 <-- |
|      | JP 3967822  | B2   | 20070829 |                 |              |
|      | EP 1022587  | A1   | 20000726 | EP 1998-911214  | 19980406 <-- |
|      | EP 1022587  | B1   | 20070613 |                 |              |
|      | R: DE, GB   |      |          |                 |              |
|      | EP 1806600  | A2   | 20070711 | EP 2007-1392    | 19980406     |
|      | R: DE, GB   |      |          |                 |              |
|      | JP 11153703   | A    | 19990608 | JP 1998-236340  | 19980807 <-- |
|      | JP 3946357  | B2   | 20070718 |                 |              |
|      | JP 11218604   | A    | 19990810 | JP 1998-283408  | 19980918 <-- |
|      | US 6210858  | B1   | 20010403 | US 1999-402341  | 19991004 <-- |
| PRAI | JP 1997-86176   | A    | 19970404 |                 |              |
|      | JP 1997-253977  | A    | 19970918 |                 |              |
|      | EP 1998-911214  | A3   | 19980406 |                 |              |
|      | WO 1998-JP1576  | W    | 19980406 |                 |              |

AB An antireflection film comprising a high-refractive-index layer having a refractive index of 1.65 to 2.40 and a low-refractive-index layer having a refractive index of 1.20 to 1.55; and another antireflection film having only a low-refractive-index layer having a refractive index of 1.20 to 1.55. A first improvement resides in the high-refractive-index layer which comprises 5 to 65 volume% of fine inorg. particles having an average particle diameter of 1 to 200 nm and 35 to 95 volume% of a cross-linked anionic polymer. A second improvement resides in the low-refractive-index layer which comprises 50 to 95 weight% of fine inorg. particles having an average particle diameter of 0.5 to 200 nm and 5 to 50 weight% of a polymer and in which

the fine inorg. particles are stacked in at least two stages so as to form microvoids among the fine particles.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---|------|----------|-----------------|--------------|
| PI | WO 9845734 A1   |      | 19981015 |                 |              |
| PI | WO 9845734  | A1   | 19981015 | WO 1998-JP1576  | 19980406 <-- |
|    | W: AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GE, GW, HU, ID, IL, IS, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |      |          |                 |              |
|    | RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG  |      |          |                 |              |
|    | AU 9865231  | A    | 19981030 | AU 1998-65231   | 19980406 <-- |
|    | JP 11006902   | A    | 19990112 | JP 1998-110173  | 19980406 <-- |
|    | JP 3967822  | B2   | 20070829 |                 |              |
|    | EP 1022587  | A1   | 20000726 | EP 1998-911214  | 19980406 <-- |
|    | EP 1022587  | B1   | 20070613 |                 |              |
|    | R: DE, GB   |      |          |                 |              |
|    | EP 1806600  | A2   | 20070711 | EP 2007-1392    | 19980406     |

R: DE, GB

|             |    |          |                |              |
|-------------|----|----------|----------------|--------------|
| JP 11153703 | A  | 19990608 | JP 1998-236340 | 19980807 <-- |
| JP 3946357  | B2 | 20070718 |                |              |
| JP 11218604 | A  | 19990810 | JP 1998-283408 | 19980918 <-- |
| US 6210858  | B1 | 20010403 | US 1999-402341 | 19991004 <-- |

IT Cathode ray tubes

Electroluminescent devices

Liquid crystal displays

Plasma display panels

(antireflection films and image display device containing the same)

IT 2530-85-0P 7631-86-9P, ST-ZL, preparation 7783-40-6P, Magnesium fluoride 7789-75-5P, Calcium fluoride, preparation 26284-14-0P, n-Butyl methacrylate-methacrylic acid polymer 28825-23-2P, Hexafluoroisopropyl methacrylate polymer 40111-87-3P, Ethyl methacrylate-glycidyl methacrylate-methyl methacrylate copolymer 67653-78-5P, Dipentaerythritol hexaacrylate homopolymer 209177-09-3P, Allyl methacrylate-benzyl methacrylate-methyl methacrylate-methacrylic acid copolymer 210985-17-4P, Allyl methacrylate-hexafluoroisopropyl methacrylate copolymer 214674-30-3P 214674-31-4P 214674-33-6P 214674-34-7P 214674-37-0P 214674-38-1P, Dipentaerythritol hexaacrylate-divinyl benzene-methyl methacrylate graft copolymer 214674-39-2P, 1,4-Divinylbenzene-hexafluoroisopropyl methacrylate-2-hydroxyethyl methacrylate-methacrylic acid copolymer 214674-40-5P, Acrylic acid-glycidyl acrylate-hexafluoroisopropyl methacrylate copolymer 214674-41-6P, 2-Hydroxyethyl methacrylate-1H, 1H-pentadecafluorooctyl acrylate copolymer 214674-42-7P, 2-Hydroxyethyl acrylate-hexafluoroisopropyl- $\alpha$ -fluoro acrylate copolymer 214674-43-8P 214677-26-6P

RL: PNU (Preparation, unclassified); PREP (Preparation)

(antireflection film)

L7 ANSWER 87 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:531974 HCAPLUS

DN 129:261456

TI Fabrication of polymer LED through layer-by-layer complexation of water-soluble conjugated polymer-europium(III) multilayers

AU Kim, Jaehyun; Chittibabu, Kethinni G.; Cazeca, Mario J.; Wang, Hsing-Chia; Kim, Woohong; Kumar, Jayant; Tripathy, Sukant K.

CS Cent. Advanced Mater., Univ. Massachusetts, Lowell, MA, 01854, USA

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1998), 39(2), 994-995

CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

AB A novel approach to the fabrication of self-assembled multilayer thin films via complexation of conjugated polymers and Eu(III) ions and their performance in light emitting devices was developed. A highly luminescent thiophene-based conjugated polymer, poly[2-(3-thienyl) ethanol butoxy carbonyl-Me urethane] (PURET) was hydrolyzed to yield water soluble, luminescent poly[2-(3-thienyl) ethanol hydroxycarbonyl-Me urethane] (H-PURET). H-PURET was employed as macromol. ligand to complex Eu (III) ions during multilayer thin film deposition.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1998), 39(2), 994-995

CODEN: ACPPAY; ISSN: 0032-3934

IT Electroluminescent devices

(Fabrication of polymer LED through layer-by-layer complexation of water-soluble conjugated polymer-europium(III) multilayers)

IT Luminescence

Luminescence, electroluminescence

Self-assembly  
 (fabrication of polymer LED through layer-by-layer complexation of water-soluble conjugated polymer-europium(III) multilayers)

IT 182691-54-9D, hydrolyzed, complexes with Europium  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (fabrication of polymer LED through layer-by-layer complexation of water-soluble conjugated polymer-europium(III) multilayers)

L7 ANSWER 88 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1998:500520 HCAPLUS  
 DN 129:251982  
 TI Energy transfer from a naphthalimide functionalized side chain polymer towards DCM used as a dopant molecule  
 AU Bouche, C.-M.; Le Barny, P.; Facoetti, H.; Robin, P.  
 CS Laboratoire Central de Recherches, Domaine de Corbeville, Thomson-CSF, Orsay, 91404, Fr.  
 SO Applied Physics Letters (1998), 73(7), 879-881  
 CODEN: APPLAB; ISSN: 0003-6951  
 PB American Institute of Physics  
 DT Journal  
 LA English  
 AB The influence of the introduction of a dopant mol., DCM, in a matrix of a naphthalimide derived polymer (PNI) was studied by UV-visible absorption spectroscopy, photoluminescence emission and excitation spectrometry, and 2-dimensional photoluminescence spectrometry. Contrary to previous observations on similar systems, energy transfer occurs between PNI and DCM. Also, photoluminescent (PL) and electroluminescent (EL) emissions are assigned to arise from the same excited state.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Applied Physics Letters (1998), 73(7), 879-881  
 CODEN: APPLAB; ISSN: 0003-6951

AB The influence of the introduction of a dopant mol., DCM, in a matrix of a naphthalimide derived polymer (PNI) was studied by UV-visible absorption spectroscopy, photoluminescence emission and excitation spectrometry, and 2-dimensional photoluminescence spectrometry. Contrary to previous observations on similar systems, energy transfer occurs between PNI and DCM. Also, photoluminescent (PL) and electroluminescent (EL) emissions are assigned to arise from the same excited state.

IT 9011-14-7, PMMA 51325-91-8, DCM 184352-98-5  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)  
 (energy transfer from naphthalimide functionalized side chain polymer towards DCM used as dopant mol.)

L7 ANSWER 89 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1998:440211 HCAPLUS  
 DN 129:123061  
 TI Electroluminescent properties of side-chain naphthalimide-derived polymers  
 AU Bouche, C. -M.; Le Barny, P.; Facoetti, H.; Soyer, F.; Robin, P.  
 CS Laboratoire Central de Recherches, Thomson-CSF, Domaine de Corbeville, Orsay, 91404, Fr.  
 SO Journal de Chimie Physique et de Physico-Chimie Biologique (1998), 95(6), 1351-1354  
 CODEN: JCPBAN; ISSN: 0021-7689  
 PB EDP Sciences  
 DT Journal  
 LA English  
 AB Six homopolymers derived from the naphthalimide emitting moiety have been synthesized and characterized by UV-visible absorption and photoluminescence (PL). These polymers differ either by the nature of the backbone [poly(Me methacrylate) or polystyrene] or by the N-substituent.

All the polymers show a green electroluminescence (EL). A bilayer diode emitted a maximum luminance as high as 7100 cd/m2 and exhibited a maximum external quantum yield of 1%.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Electroluminescent properties of side-chain naphthalimide-derivated polymers  
SO Journal de Chimie Physique et de Physico-Chimie Biologique (1998), 95(6), 1351-1354  
CODEN: JCPBAN; ISSN: 0021-7689  
AB Six homopolymers derived from the naphthalimide emitting moiety have been synthesized and characterized by UV-visible absorption and photoluminescence (PL). These polymers differ either by the nature of the backbone [poly(Me methacrylate) or polystyrene] or by the N-substituent. All the polymers show a green electroluminescence (EL). A bilayer diode emitted a maximum luminance as high as 7100 cd/m2 and exhibited a maximum external quantum yield of 1%.  
ST electroluminescence side chain naphthalimide polymer  
IT Luminescence, electroluminescence  
(electroluminescent properties of side-chain naphthalimide-derived polymers)  
IT Electroluminescent devices  
(green-emitting; electroluminescent properties of side-chain naphthalimide-derived polymers)  
IT 184352-98-5 203387-01-3 203387-03-5  
203387-05-7 203387-07-9 203387-09-1  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(electroluminescent properties of side-chain naphthalimide-derived polymers)

L7 ANSWER 90 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1998:427916 HCAPLUS  
DN 129:154530  
TI Organic compound for electroluminescent device  
IN Toshida, Yoshi; Imoo, Akihiro; Ueno, Kazunori  
PA Canon K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 28 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

|      | PATENT NO.   | KIND     | DATE     | APPLICATION NO. | DATE         |
|------|--|----------|----------|-----------------|--------------|
| PI   | JP 10175938  | A        | 19980630 | JP 1996-353785  | 19961218 <-- |
|      | JP 3592017   | B2       | 20041124 |                 |              |
| PRAI | JP 1996-353785   |          | 19961218 |                 |              |
| OS   | MARPAT 129:154530  |          |          |                 |              |
| AB   | An organic compound, suited for use in an organic electroluminescent device, is represented by H2C:C(R1)CONHCOR2 or its polymer [R1 = H, alkyl and halo; R2 = I or X-Ar; X = NH, O, and S; Ar = aromatic and heterocyclic groups]. |          |          |                 |              |
| TI   | Organic compound for electroluminescent device   |          |          |                 |              |
| PI   | JP 10175938 A  | 19980630 | Heisei   |                 |              |
|      | PATENT NO.   | KIND     | DATE     | APPLICATION NO. | DATE         |
| PI   | JP 10175938  | A        | 19980630 | JP 1996-353785  | 19961218 <-- |
|      | JP 3592017   | B2       | 20041124 |                 |              |
| AB   | An organic compound, suited for use in an organic electroluminescent device, is represented by H2C:C(R1)CONHCOR2 or its polymer [R1 = H, alkyl and halo; R2 = I or X-Ar; X = NH, O, and S; Ar = aromatic and heterocyclic groups]. |          |          |                 |              |
| ST   | org electroluminescent device methacryloylaminocarbonyl  |          |          |                 |              |

aminophenyl phenylamine

IT Electroluminescent devices  
Optical materials  
(organic compound for electroluminescent device)

IT Polymers, uses  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic compound for electroluminescent device)

IT 210637-94-8P 210637-95-9P 210637-96-0P 210637-97-1P  
210637-98-2P 210637-99-3P 210638-00-9P  
210638-01-0P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(organic compound for electroluminescent device)

L7 ANSWER 91 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:336339 HCAPLUS

DN 129:46954

TI Fabrication of polymer light emitting diodes by layer-by-layer complexation technique

AU Kim, Jaehyun; Chittibabu, Kethinni G.; Cazeca, Mario J.; Kim, Woohong; Kumar, Jayant; Tripathy, Sukant K.

CS Center for Advanced Materials, Department of Chemistry and Physics, University of Massachusetts, Westford, MA, 01854, USA

SO Materials Research Society Symposium Proceedings (1998), 488(Electrical, Optical, and Magnetic Properties of Organic Solid-State Materials IV), 527-532  
CODEN: MRSPDH; ISSN: 0272-9172

PB Materials Research Society

DT Journal

LA English

AB Multilayer films were fabricated employing a new layer-by-layer complexation technique by alternatively dipping substrates in solns. of macromol. ligands and Eu<sup>3+</sup> ions. A luminescent poly[2-(3-thienyl)ethanol hydroxycarbonyl-Me urethane] (H-PURET) was prepared by hydrolysis of thiophene polymer, poly[2-(3-thienyl)ethanol butoxycarbonyl-Me urethane] (PURET), which was developed in the authors' laboratory H-PURET was used as macromol. ligands. The multilayer deposition was monitored using UV-visible spectroscopy. As the number of bilayers increases, the absorption due to the polymer increases. The multilayer films were characterized by IR and fluorescence spectroscopic techniques. Electroluminescence brightness easily obtained from the multilayer film of conjugated polymer-Eu<sup>3+</sup> complex is .apprx.40 nW.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Materials Research Society Symposium Proceedings (1998), 488(Electrical, Optical, and Magnetic Properties of Organic Solid-State Materials IV), 527-532  
CODEN: MRSPDH; ISSN: 0272-9172

AB Multilayer films were fabricated employing a new layer-by-layer complexation technique by alternatively dipping substrates in solns. of macromol. ligands and Eu<sup>3+</sup> ions. A luminescent poly[2-(3-thienyl)ethanol hydroxycarbonyl-Me urethane] (H-PURET) was prepared by hydrolysis of thiophene polymer, poly[2-(3-thienyl)ethanol butoxycarbonyl-Me urethane] (PURET), which was developed in the authors' laboratory H-PURET was used as macromol. ligands. The multilayer deposition was monitored using UV-visible spectroscopy. As the number of bilayers increases, the absorption due to the polymer increases. The multilayer films were characterized by IR and fluorescence spectroscopic techniques. Electroluminescence brightness easily obtained from the multilayer film of conjugated polymer-Eu<sup>3+</sup> complex is .apprx.40 nW.

IT Electroluminescent devices  
IR spectra

Luminescence  
Luminescence, electroluminescence  
Semiconductor device fabrication  
UV and visible spectra

(properties and fabrication of polymer light emitting diodes by layer-by-layer complexation technique)

IT 7429-90-5, Aluminum, uses 7440-53-1D, Europium, polymer complex, uses 10025-76-0, Europium trichloride 25233-30-1, Polyaniline 50926-11-9, Indium tin oxide 473542-50-6D, europium complex  
RL: DEV (Device component use); USES (Uses)

(properties and fabrication of polymer light emitting diodes by layer-by-layer complexation technique)

IT 473542-50-6P  
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(properties and fabrication of polymer light emitting diodes by layer-by-layer complexation technique)

IT 182691-54-9  
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(properties and fabrication of polymer light emitting diodes by layer-by-layer complexation technique)

L7 ANSWER 92 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:249252 HCAPLUS

DN 128:288112

TI Naphthalimide polymers for organic light-emitting diodes

AU Cacialli, F.; Bouche, C.-M.; Le Barny, P.; Friend, R. H.; Facchetti, H.; Soyer, F.; Robin, P.

CS Cavendish Laboratory, Cambridge University, Cambridge, CB3 0HE, UK

SO Optical Materials (Amsterdam) (1998), 9(1-4), 163-167

CODEN: OMATET; ISSN: 0925-3467

PB Elsevier Science B.V.

DT Journal

LA English

AB We used a side-chain polymer based on a high-electron affinity (EA) naphthalimide moiety (PNI), to fabricate single and double-layer light-emitting diodes (LEDs) with improved efficiency in the green spectral region. The chromophore is attached to a polymethacrylate backbone through a spacer and is characterized by a 30% photoluminescence quantum yield. In single-layer light-emitting diodes the electroluminescence efficiency is not limited by Al cathodes as for poly(p-phenylenevinylene), PPV, as expected from consideration of the EA. We also report maximum internal quantum efficiencies of about 1.7% for Ca and 0.9% for Al in double-layer devices where PPV serves as both hole-injector and emitter. Tuning of emission in the red is possible by dye-doping (at high concentration) the PNI and causing the emission to happen in

this layer. Unexpectedly, not only does the dye-doping of PNI red-shifts the emission spectrum, but also affects significantly the charge transport properties and in particular reduces the driving field necessary for electroluminescence in both single- and double-layer LEDs and we propose this effect as one of the factors for the lifetime increase upon doping recently reported in the literature [J. Shi, C. W. Tang, Appl. Phys. Lett. 70 (1997) 1665.].

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Optical Materials (Amsterdam) (1998), 9(1-4), 163-167  
CODEN: OMATET; ISSN: 0925-3467

AB We used a side-chain polymer based on a high-electron affinity (EA) naphthalimide moiety (PNI), to fabricate single and double-layer light-emitting diodes (LEDs) with improved efficiency in the green spectral region. The chromophore is attached to a polymethacrylate

backbone through a spacer and is characterized by a 30% photoluminescence quantum yield. In single-layer light-emitting diodes the electroluminescence efficiency is not limited by Al cathodes as for poly(p-phenylenevinylene), PPV, as expected from consideration of the EA. We also report maximum internal quantum efficiencies of about 1.7% for Ca and 0.9% for Al in double-layer devices where PPV serves as both hole-injector and emitter. Tuning of emission in the red is possible by dye-doping (at high concentration) the PNI and causing the emission to happen

in

this layer. Unexpectedly, not only does the dye-doping of PNI red-shifts the emission spectrum, but also affects significantly the charge transport properties and in particular reduces the driving field necessary for electroluminescence in both single- and double-layer LEDs and we propose this effect as one of the factors for the lifetime increase upon doping recently reported in the literature [J. Shi, C. W. Tang, Appl. Phys. Lett. 70 (1997) 1665.].

IT Electroluminescent devices  
Luminescence

(naphthalimide-containing polymethacrylate for organic light-emitting diodes)

IT 7429-90-5, Aluminum, properties 7440-70-2, Calcium, properties 26009-24-5, Poly(p-phenylenevinylene) 184352-98-5

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(naphthalimide-containing polymethacrylate for organic light-emitting diodes)

L7 ANSWER 93 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:201695 HCAPLUS

DN 128:314781

TI Effect of majority carrier space charges on minority carrier injection in dye doped polymer light-emitting devices

AU Berleb, S.; Brutting, W.; Schwoerer, M.; Wehrmann, R.; Elschner, A.

CS Experimentalphysik II, Universitat Bayreuth, Bayreuth, 95440, Germany

SO Journal of Applied Physics (1998), 83(8), 4403-4409

CODEN: JAPIAU; ISSN: 0021-8979

PB American Institute of Physics

DT Journal

LA English

AB By blending suitable dyes into poly(N-vinylcarbazole) the authors have fabricated devices which emit light in the whole visible spectrum. Their current-voltage characteristics can be described by space-charge limited currents with effective trapping of the charge carriers by the dye mols., while the light intensity shows a Fowler-Nordheim-like behavior as a function of the external elec. field. However, the anodic space charge changes the field distribution inside the device and leads to a cathodic field enhancement which has to be considered in the Fowler-Nordheim equation. The authors were able to model the electroluminescence characteristics by assuming tunneling of the minority charge carriers through a triangular barrier. The obtained barrier heights showed a strong dependence on the dye mols., suggesting that the injection of minority charge carriers takes place directly into the LUMO of the chromophores. Using poly(p-phenylenevinylene) and an oxadiazole starburst mol. as addnl. hole and electron transport layers, resp., luminance of 250 cd/m2 and external quantum efficiency of 1% could be achieved.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Journal of Applied Physics (1998), 83(8), 4403-4409

CODEN: JAPIAU; ISSN: 0021-8979

AB By blending suitable dyes into poly(N-vinylcarbazole) the authors have fabricated devices which emit light in the whole visible spectrum. Their current-voltage characteristics can be described by space-charge limited currents with effective trapping of the charge carriers by the dye mols., while the light intensity shows a Fowler-Nordheim-like behavior as a

function of the external elec. field. However, the anodic space charge changes the field distribution inside the device and leads to a cathodic field enhancement which has to be considered in the Fowler-Nordheim equation. The authors were able to model the electroluminescence characteristics by assuming tunneling of the minority charge carriers through a triangular barrier. The obtained barrier heights showed a strong dependence on the dye mols., suggesting that the injection of minority charge carriers takes place directly into the LUMO of the chromophores. Using poly(p-phenylenevinylene) and an oxadiazole starburst mol. as addnl. hole and electron transport layers, resp., luminance of 250 cd/m<sup>2</sup> and external quantum efficiency of 1% could be achieved.

ST LED dye polymer space charge injection; phenylene vinylene polymer LED charge injection; vinylcarbazole polymer dye LED charge injection; tunneling LED dye polymer charge injection; electroluminescence dye polymer LED charge injection; potential barrier LED dye polymer charge; LUMO charge injection LED dye polymer

IT Electric current-potential relationship  
Electric potential  
Electroluminescent devices  
Fowler-Nordheim tunneling  
LUMO (molecular orbital)  
Luminescence, electroluminescence  
Potential barrier  
Space charge  
Tunneling  
(effect of majority carrier space charges on minority carrier injection in dye doped polymer light-emitting devices)

IT 34564-13-1 40703-88-6 70546-25-7 203984-86-5  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(effect of majority carrier space charges on minority carrier injection in dye doped polymer light-emitting devices)

L7 ANSWER 94 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1998:126452 HCAPLUS  
DN 128:198704  
TI Copolymer based on vinyl repeating unit and its use in electroluminescence device  
IN Chen, Yun; Koehler, Burkhard; Wehrmann, Rolf; Elschner, Andreas; Dujardin, Ralf  
PA Bayer A.-G., Germany  
SO Ger. Offen., 24 pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
FAN.CNT 1

|      | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|---|------|----------|------------------|--------------|
| PI   | DE 19632949   | A1   | 19980219 | DE 1996-19632949 | 19960816 <-- |
|      | EP 825207   | A2   | 19980225 | EP 1997-113454   | 19970805 <-- |
|      | EP 825207   | A3   | 19990526 |                  |              |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI |      |          |                  |              |
|      | US 6114463  | A    | 20000905 | US 1997-909278   | 19970811 <-- |
|      | JP 10101738   | A    | 19980421 | JP 1997-230465   | 19970813 <-- |
| PRAI | DE 1996-19632949  | A    | 19960816 |                  |              |

AB The title copolymer comprises at least repeating structural units of I [R1 = H, C1-6-alkyl; R2 = H, C1-30-alkyl, C6-18-aryl, C1-6-alkoxy; A1 = C6-18-arylene, C1-30-alkylene; L1 = photoluminescent group] and CH2:CR3(COYA2NHCOOL2) (II) [R3 = H, C1-6-alkyl; Y = O, S, -NR0-; R0 = H, C1-6-alkyl; A2 = C6-18-arylene, C1-30-alkylene; L2 = photoluminescent group] and optionally CH2:CR4M (III) [R4 = H, C1-6-alkyl; M = CN, C1-30-alkoxycarbonyl, C1-30-(di)alkylaminocarbonyl, C1-30-alkylcarbonyl]



or at least repeating structural units of (II) and (III).

TI Copolymer based on vinyl repeating unit and its use in electroluminescence device

PI DE 19632949 A1 19980219

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE         |
|---|------|----------|------------------|--------------|
| DE 19632949   | A1   | 19980219 | DE 1996-19632949 | 19960816 <-- |
| EP 825207   | A2   | 19980225 | EP 1997-113454   | 19970805 <-- |
| EP 825207   | A3   | 19990526 |                  |              |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI |      |          |                  |              |
| US 6114463  | A    | 20000905 | US 1997-909278   | 19970811 <-- |
| JP 10101738   | A    | 19980421 | JP 1997-230465   | 19970813 <-- |

ST vinyl polymer electroluminescent device

IT Electroluminescent devices  
(copolymer based on vinyl repeating unit and its use in electroluminescence device)

IT 107-85-7, Isoamylamine 109-83-1, 2-(Methylamino)-ethanol 4053-08-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of copolymer based on vinyl repeating unit suitable for electroluminescence device)

IT 181373-32-0P, 4-Chloro-N-isoamyl-1,8-naphthalimide 181373-33-1P  
183209-01-0P, 2-Isocyanatoethyl methacrylate-N-vinylcarbazole copolymer  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of copolymer based on vinyl repeating unit suitable for electroluminescence device)

IT 181373-33-1DP, reaction products with polymeric vinylic isocyanates  
183209-01-0DP, reaction products with hydroxynaphthalimide derivative  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of copolymer based on vinyl repeating unit suitable for electroluminescence device)

L7 ANSWER 95 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:115945 HCAPLUS

DN 128:181085

TI Curable epoxy resin compositions with high-dielectric properties and polar solvent resistance and their cyanoethylated amine curing agents

IN Nishikawa, Satoshi; Bessho, Shinji

PA Sunstar Engineering, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| PATENT NO.          | KIND | DATE     | APPLICATION NO. | DATE         |
|---------------------|------|----------|-----------------|--------------|
| JP 10046006         | A    | 19980217 | JP 1996-204600  | 19960802 <-- |
| PRAI JP 1996-204600 |      | 19960802 |                 |              |

AB Title composition, useful for electroluminescent device, comprises an epoxy resin and an cyanoethylated amine curing agent prepared from amine containing  $\geq 2$  amino and/or imino groups and cyanoethylated polyhydroxyalkyl ether (meth)acrylate or cyanoethylated polyhydroxyalkyl glycidyl ether. Thus, 37.8 g tetraethylenepentamine was reacted with 145.4 g tricyanoethylated pentaerythritol methacrylate (prepared from pentaerythritol, acrylonitrile and methacrylic acid) for 6 h to give a viscous liquid, 9.2 parts of which mixed with 10 parts Epikote 828 (epoxy resin), coated onto an aluminum plate and heated at 120° for 60 min, showing dielec. constant 6.32, elec. conductivity  $1.4 \times 10^{-7}$  S/cm and no swelling after immersion in propylene carbonate at room temperature for 24 h.

PI JP 10046006 A 19980217 Heisei

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

PI JP 10046006 A 19980217 JP 1996-204600 19960802 <--  
 AB Title composition, useful for electroluminescent device, comprises an epoxy resin and an cyanoethylated amine curing agent prepared from amine containing  $\geq 2$  amino and/or imino groups and cyanoethylated polyhydroxyalkyl ether (meth)acrylate or cyanoethylated polyhydroxyalkyl glycidyl ether. Thus, 37.8 g tetraethylenepentamine was reacted with 145.4 g tricyanoethylated pentaerythritol methacrylate (prepared from pentaerythritol, acrylonitrile and methacrylic acid) for 6 h to give a viscous liquid, 9.2 parts of which mixed with 10 parts Epikote 828 (epoxy resin), coated onto an aluminum plate and heated at 120° for 60 min, showing dielec. constant 6.32, elec. conductivity  $1.4 \times 10^{-7}$  S/cm and no swelling after immersion in propylene carbonate at room temperature for 24 h.  
 ST epoxy resin cyanoethylated dielec property electroluminescent;  
 IT cyanoethylated pentaerythritol methacrylate amine crosslinking agent  
 IT Electric insulators  
 Electroluminescent devices  
 (curable epoxy resin compns. with high-dielec. properties and polar solvent resistance for)  
 IT 203255-78-1P 203255-84-9P 203255-86-1P  
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (curable epoxy resin compns. with high-dielec. properties and polar solvent resistance)  
  
 L7 ANSWER 96 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1998:104085 HCAPLUS  
 DN 128:210660  
 TI Organic electroluminescence and applications  
 AU Dubois, J. C.; Le Barny, P.; Bouche, C. M.; Berdague, P.; Facoetti, H.; Robin, P.  
 CS THOMSON-CSF Laboratoire Central de Recherches, ORSAY, 91404, Fr.  
 SO NATO ASI Series, Series 3: High Technology (1996), 9(Photoactive Organic Materials), 313-323  
 CODEN: NAHTF4; ISSN: 1383-7168  
 PB Kluwer Academic Publishers  
 DT Journal; General Review  
 LA English  
 AB A brief history of organic luminescence is presented in addition to the main characteristics and materials. Some material performance is presented in addition to problems to be solved for future development. The electroluminescence performance of a DCM-doped polymer is shown. The maximum wavelength of the emitted light varies as a function of the DCM-doping by evolution from green for the pure polymer to red for DCM doping. A significant amount of review material is included.  
 RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT  
 TI Organic electroluminescence and applications  
 SO NATO ASI Series, Series 3: High Technology (1996), 9(Photoactive Organic Materials), 313-323  
 CODEN: NAHTF4; ISSN: 1383-7168  
 AB A brief history of organic luminescence is presented in addition to the main characteristics and materials. Some material performance is presented in addition to problems to be solved for future development. The electroluminescence performance of a DCM-doped polymer is shown. The maximum wavelength of the emitted light varies as a function of the DCM-doping by evolution from green for the pure polymer to red for DCM doping. A significant amount of review material is included.  
 ST review org electroluminescence; org electroluminescence  
 ; electroluminescence DCM polymer  
 IT Luminescence, electroluminescence  
 Organic matter  
 (organic electroluminescence and applications)

IT Polymers, properties  
 RL: PRP (Properties)  
 (organic electroluminescence and applications)

IT 51325-91-8, Propanedinitrile, [2-[2-[4-(dimethylamino)phenyl]ethenyl]-6-methyl-4H-pyran-4-ylidene]-  
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
 (organic electroluminescence and applications)

IT 184352-98-5  
 RL: PRP (Properties)  
 (organic electroluminescence and applications)

L7 ANSWER 97 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1998:96604 HCAPLUS  
 DN 128:160746  
 TI Naphthalimide side-chain polymers for organic light-emitting diodes:  
 Band-offset engineering and role of polymer thickness  
 AU Cacialli, F.; Friend, R. H.; Bouche, C.-M.; Le Barney, P.; Facchetti, H.;  
 Soyer, F.; Robin, P.  
 CS Cavendish Laboratory, Cambridge University, Madingley Road, Cambridge, CB3  
 0HE, UK  
 SO Journal of Applied Physics (1998), 83(4), 2343-2356  
 CODEN: JAPIAU; ISSN: 0021-8979  
 PB American Institute of Physics  
 DT Journal  
 LA English  
 AB Efficient green light-emitting diodes were fabricated using a side-chain  
 random polymer based on a high electron affinity (EA) naphthalimide moiety  
 (PNI). The chromophore is attached to a polymethacrylate backbone through  
 a spacer, and emits in the green with high efficiency (30  
 photoluminescence quantum yield). In single-layer light-emitting diodes  
 (LEDs), the electroluminescence quantum efficiency is not  
 limited by Al cathodes as for poly(p-phenylene vinylene), PPV, and is  
 attributed to the increased EA. Maximum internal quantum efficiency of about  
 1.7 for Ca and 0.9 for Al was attained by double-layer devices where PPV  
 serves as both hole injector and emitter. Compared to some oxadiazole  
 based electron injection/transport layers, PNI gives higher efficiencies  
 at high currents, and longer lifetimes. Tuning of emission in the red is  
 possible by dye doping (at high concentration) the PNI with DCM and causing the  
 emission to happen in this layer. The performance of different device  
 configurations are described from the viewpoint of the electronic  
 structure of the materials and, in particular, the influence of the  
 thickness of the individual layers on both quantum (photon/electron) and  
 luminous (Lumen/W) efficiency and driving conditions. Dye doping of PNI  
 causes red shift of the emission spectrum, and also affects significantly  
 the charge transport properties, and in particular reduces the driving  
 field necessary for electroluminescence in both single and  
 double-layer LEDs.

RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Journal of Applied Physics (1998), 83(4), 2343-2356  
 CODEN: JAPIAU; ISSN: 0021-8979

AB Efficient green light-emitting diodes were fabricated using a side-chain  
 random polymer based on a high electron affinity (EA) naphthalimide moiety  
 (PNI). The chromophore is attached to a polymethacrylate backbone through  
 a spacer, and emits in the green with high efficiency (30  
 photoluminescence quantum yield). In single-layer light-emitting diodes  
 (LEDs), the electroluminescence quantum efficiency is not  
 limited by Al cathodes as for poly(p-phenylene vinylene), PPV, and is  
 attributed to the increased EA. Maximum internal quantum efficiency of about  
 1.7 for Ca and 0.9 for Al was attained by double-layer devices where PPV  
 serves as both hole injector and emitter. Compared to some oxadiazole  
 based electron injection/transport layers, PNI gives higher efficiencies  
 at high currents, and longer lifetimes. Tuning of emission in the red is

possible by dye doping (at high concentration) the PNI with DCM and causing the emission to happen in this layer. The performance of different device configurations are described from the viewpoint of the electronic structure of the materials and, in particular, the influence of the thickness of the individual layers on both quantum (photon/electron) and luminous (Lumen/W) efficiency and driving conditions. Dye doping of PNI causes red shift of the emission spectrum, and also affects significantly the charge transport properties, and in particular reduces the driving field necessary for electroluminescence in both single and double-layer LEDs.

- IT Band bending
- Electron affinity
- Electronic state
- HOMO (molecular orbital)
- Hole (electron)
- LUMO (molecular orbital)
- Luminescence, electroluminescence
- Thermal stability
  - (band structure engineering and device configurations of ITO/naphthalimide side-chain polyacrylate/PPV/metal light-emitting diodes)
- IT Electroluminescent devices
  - (light-emitting diodes; band structure engineering and device configurations of ITO/naphthalimide side-chain polyacrylate/PPV/metal light-emitting diodes)
- IT 184352-98-5
  - RL: DEV (Device component use); PRP (Properties); USES (Uses)
  - (band structure engineering and device configurations of ITO/naphthalimide side-chain polyacrylate/PPV/metal light-emitting diodes)

L7 ANSWER 98 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:90799 HCAPLUS

DN 128:186309

TI Light-emitting diodes with naphthalimide side-chain polymers: basic properties and role of polymer thickness in 2-layer devices

AU Cacialli, F.; Bouche, C.-M.; Le Barny, P.; Facchetti, H.; Soyer, F.; Robin, P.; Friend, R. H.

CS Cavendish Laboratory, Cambridge University, Cambridge, CB3 0HE, UK

SO Proceedings of SPIE-The International Society for Optical Engineering (1997), 3148(Organic Light-Emitting Materials and Devices), 290-297  
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB The authors report the fabrication of efficient green light-emitting diodes using a side-chain polymer based on a high-electron affinity (EA) naphthalimide moiety (PNI). The chromophore is attached to a polymethacrylate backbone through a spacer, and emits in the green with high efficiency (30% photoluminescence quantum yield). In single-layer light-emitting diodes (LEDs), the authors find that the electroluminescence (EL) efficiency is not limited by Al cathodes as for poly(p-phenylenevinylene), PPV, and the authors attribute this to the increased EA. The authors report maximum internal efficiencies of about 1.7% for Ca and 0.9% for Al in double-layer devices where PPV serves as both hole-injector and emitter. Compared to some oxadiazole based electron injection/transport layer, PNI gives higher efficiencies at high currents, and longer lifetimes (time to reach 50% of the initial emission). Tuning of emission in the red is possible by dye-doping the PNI and causing the emission to happen in this layer. The authors discuss the properties of the different device configurations with a view to the electronic structure of the materials and in particular to the influence of the thickness of the individual layers on efficiency and driving

conditions.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Proceedings of SPIE-The International Society for Optical Engineering (1997), 3148(Organic Light-Emitting Materials and Devices), 290-297  
CODEN: PSISDG; ISSN: 0277-786X

AB The authors report the fabrication of efficient green light-emitting diodes using a side-chain polymer based on a high-electron affinity (EA) naphthalimide moiety (PNI). The chromophore is attached to a polymethacrylate backbone through a spacer, and emits in the green with high efficiency (30% photoluminescence quantum yield). In single-layer light-emitting diodes (LEDs), the authors find that the electroluminescence (EL) efficiency is not limited by Al cathodes as for poly(p-phenylenevinylene), PPV, and the authors attribute this to the increased EA. The authors report maximum internal efficiencies of about 1.7% for Ca and 0.9% for Al in double-layer devices where PPV serves as both hole-injector and emitter. Compared to some oxadiazole based electron injection/transport layer, PNI gives higher efficiencies at high currents, and longer lifetimes (time to reach 50% of the initial emission). Tuning of emission in the red is possible by dye-doping the PNI and causing the emission to happen in this layer. The authors discuss the properties of the different device configurations with a view to the electronic structure of the materials and in particular to the influence of the thickness of the individual layers on efficiency and driving conditions.

IT Electroluminescent devices

(basic properties and role of polymer thickness in 2-layer devices

containing light-emitting diodes with naphthalimide side-chain polymers)

IT 184352-98-5

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(basic properties and role of polymer thickness in 2-layer devices

containing light-emitting diodes with naphthalimide side-chain polymers)

L7 ANSWER 99 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:90662 HCAPLUS

DN 128:186035

TI Synthesis of side chain electroluminescent polymers and properties of devices including them

AU Le Barny, Pierre; Bouche, Cecile-Maria; Facchetti, Hugues; Soyer, Françoise; Robin, Philippe

CS Laboratoire Central Recherches, Thomson-CSF Domaine Corbeville, Orsay, 91404, Fr.

SO Proceedings of SPIE-The International Society for Optical Engineering (1997), 3148(Organic Light-Emitting Materials and Devices), 160-169  
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB 4-Aminonaphthalimide functionalized polymers were synthesized. They differ by the nature of their backbone: (either a polymethacrylate or a polystyrene) and by the nature of the substituent at the imide N atom. The absorption and emission properties of these polymers were studied. Photoluminescence quantum yields in the solid state up to 35% were observed. Cyclic voltammetry in conjunction with UV-visible spectrometry were performed to determine the HOMO and LUMO energy levels of the different materials. Electroluminescent devices were fabricated with these polymers as emitting layers, and ITO and Ca (or Al) as anode and cathode, resp. Monolayer devices showed a limited performance. Efficient green light emission was obtained with a bilayer device based on PVK as a hole transport material and a polystyrene derivative (PST-NI-BuP) as an emitting layer. A maximum luminance of 7100 cd/m<sup>2</sup> was obtained under 16 V. The device had a maximum external quantum efficiency of 1% and a maximum external energetic efficiency of 0.2%. Doping PST-NI-BuP with 20% DCM

resulted in red-orange emission with a brightness  $\leq 1800$  cd/m<sup>2</sup>.

Also, this study showed a strong influence of the chemical environment of the naphthalimide moiety on the photoluminescent and electroluminescent properties of the polymers.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

- TI Synthesis of side chain electroluminescent polymers and properties of devices including them
- SO Proceedings of SPIE-The International Society for Optical Engineering (1997), 3148(Organic Light-Emitting Materials and Devices), 160-169  
CODEN: PSISDG; ISSN: 0277-786X
- AB 4-Aminonaphthalimide functionalized polymers were synthesized. They differ by the nature of their backbone: (either a polymethacrylate or a polystyrene) and by the nature of the substituent at the imide N atom. The absorption and emission properties of these polymers were studied. Photoluminescence quantum yields in the solid state up to 35% were observed. Cyclic voltammetry in conjunction with UV-visible spectrometry were performed to determine the HOMO and LUMO energy levels of the different materials. Electroluminescent devices were fabricated with these polymers as emitting layers, and ITO and Ca (or Al) as anode and cathode, resp. Monolayer devices showed a limited performance. Efficient green light emission was obtained with a bilayer device based on PVK as a hole transport material and a polystyrene derivative (PST-NI-BuP) as an emitting layer. A maximum luminance of 7100 cd/m<sup>2</sup> was obtained under 16 V. The device had a maximum external quantum efficiency of 1% and a maximum external energetic efficiency of 0.2%. Doping PST-NI-BuP with 20% DCM resulted in red-orange emission with a brightness  $\leq 1800$  cd/m<sup>2</sup>. Also, this study showed a strong influence of the chemical environment of the naphthalimide moiety on the photoluminescent and electroluminescent properties of the polymers.
- ST synthesis side chain electroluminescent polymer;  
electroluminescence luminescence device polymer
- IT Phosphors  
(electroluminescent, polymers; synthesis of side chain electroluminescent polymers and properties of devices including them)
- IT Polymers, properties  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(side-chain; synthesis of side chain electroluminescent polymers and properties of devices including them)
- IT Electroluminescent devices  
Energy level  
Luminescence  
Luminescence, electroluminescence  
Substituent effects  
(synthesis of side chain electroluminescent polymers and properties of devices including them)
- IT 25067-59-8, PVK  
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)  
(PVK; synthesis of side chain electroluminescent polymers and properties of devices including them)
- IT 7429-90-5, Aluminum, uses 7440-70-2, Calcium, uses 50926-11-9, Indium tin oxide 51325-91-8, DCM 184353-07-9 203387-12-6  
RL: DEV (Device component use); USES (Uses)  
(synthesis of side chain electroluminescent polymers and properties of devices including them)
- IT 184352-98-5P 203387-01-3P 203387-03-5P  
203387-05-7P 203387-07-9P 203387-09-1P  
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)  
(synthesis of side chain electroluminescent polymers and properties of devices including them)

L7 ANSWER 100 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1998:57763 HCAPLUS  
 DN 128:210637  
 TI Full color electroluminescence using dye-dispersed polymer blends  
 AU Brutting, W.; Berleb, S.; Egerer, G.; Schwoerer, M.; Wehrmann, R.; Elschner, A.  
 CS Experimentalphysik II and Bayreuther Institut fur Makromolekulforschung (BIMF), Universitat Bayreuth, 95440, Bayreuth, Germany  
 SO Synthetic Metals (1997), 91(1-3), 325-327  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 PB Elsevier Science S.A.  
 DT Journal  
 LA English  
 AB By blending suitable dyes into poly(N-vinylcarbazole) (PVK) the authors have fabricated devices which emit light in the whole visible spectrum. Their current-voltage (I-V) characteristics can be described by space-charge limited currents (SCLC) with effective trapping of the charge carriers by the dye mols., while the light intensity shows a Fowler-Nordheim-like behavior as a function of the mean elec. field. The authors were able to model the electroluminescence characteristics by assuming tunneling of the minority charge carriers through a triangular barrier. The obtained barrier heights showed a strong dependence on the dye mols., suggesting that the injection of minority charge carriers takes place directly into the LUMO levels of the chromophores. The recombination along with the space charge leads to a steeper increase of the current and a Fowler-Nordheim-like I-V characteristic in the double injection regime though the majority carrier current is not injection-limited.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Full color electroluminescence using dye-dispersed polymer blends  
 SO Synthetic Metals (1997), 91(1-3), 325-327  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 AB By blending suitable dyes into poly(N-vinylcarbazole) (PVK) the authors have fabricated devices which emit light in the whole visible spectrum. Their current-voltage (I-V) characteristics can be described by space-charge limited currents (SCLC) with effective trapping of the charge carriers by the dye mols., while the light intensity shows a Fowler-Nordheim-like behavior as a function of the mean elec. field. The authors were able to model the electroluminescence characteristics by assuming tunneling of the minority charge carriers through a triangular barrier. The obtained barrier heights showed a strong dependence on the dye mols., suggesting that the injection of minority charge carriers takes place directly into the LUMO levels of the chromophores. The recombination along with the space charge leads to a steeper increase of the current and a Fowler-Nordheim-like I-V characteristic in the double injection regime though the majority carrier current is not injection-limited.

ST LED polymer blend dye coumarine methine; electroluminescent device polymer dye coumarine methine; PVK polymer dye coumarine methine LED; vinylcarbazole polymer dye coumarine methine LED; current voltage LED PVK dye blend; carrier tunneling LED PVK dye blend; LUMO carrier injection LED PVK dye

IT Dyes  
 (coumarine and methine; full color electroluminescence using dye-dispersed polymer blends in PVK LED with carrier dynamics)

IT Chromophores  
 Electric current-potential relationship  
 Electric field  
 Electroluminescent devices

LUMO (molecular orbital)  
Luminescence, electroluminescence  
Potential barrier  
Space charge  
Trapping  
Tunneling

(full color electroluminescence using dye-dispersed polymer blends in PVK LED with carrier dynamics)

IT Electric current carriers  
(injection; full color electroluminescence using dye-dispersed polymer blends in PVK LED with carrier dynamics)

IT 50926-11-9, ITO

RL: DEV (Device component use); USES (Uses)  
(full color electroluminescence using dye-dispersed polymer blends in PVK LED with carrier dynamics)

IT 35773-43-4 40703-88-6 70546-25-7 203984-86-5

RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(full color electroluminescence using dye-dispersed polymer blends in PVK LED with carrier dynamics)

IT 25067-59-8, Poly(N-vinylcarbazole)

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(full color electroluminescence using dye-dispersed polymer blends in PVK LED with carrier dynamics)

L7 ANSWER 101 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1997:692398 HCAPLUS

DN 127:339067

TI Organic field-effect electroluminescent device and its manufacture

IN Sato, Yoshiharu

PA Mitsubishi Chemical Industries Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 09274990   | A    | 19971021 | JP 1996-85197   | 19960408 <-- |
| PRAI | JP 1996-85197 |      | 19960408 |                 |              |

AB The device is manufactured by forming a sealing layer comprising an adhesive with 100%-tensile strength (JIS K 6301)  $\leq 50$  kg/cm<sup>2</sup> and moisture permeability (JIS Z 0208, for 24 h)  $\leq 20$  g/m<sup>2</sup> (200  $\mu$ m) and then forming an air-shielding layer on the sealing layer. The obtained device is also claimed. The device showed stable luminescent characteristics.

TI Organic field-effect electroluminescent device and its manufacture

|    |               |          |          |                 |              |
|----|---------------|----------|----------|-----------------|--------------|
| PI | JP 09274990 A | 19971021 | Heisei   |                 |              |
|    | PATENT NO.    | KIND     | DATE     | APPLICATION NO. | DATE         |
| PI | JP 09274990   | A        | 19971021 | JP 1996-85197   | 19960408 <-- |

ST field effect electroluminescent device polyurethane adhesive; sealing layer polyurethane electroluminescent device

IT Glass, uses

RL: DEV (Device component use); USES (Uses)  
(air-shielding layer; organic field-effect electroluminescent device having polyurethane adhesive sealing layer)

IT Polyamides, uses

Silica gel, uses

Zeolites (synthetic), uses



RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(desiccants; organic field-effect electroluminescent device having polyurethane adhesive sealing layer)

IT Adhesives

Electroluminescent devices

(organic field-effect electroluminescent device having polyurethane adhesive sealing layer)

IT Polyurethanes, uses

RL: DEV (Device component use); USES (Uses)

(organic field-effect electroluminescent device having polyurethane adhesive sealing layer)

IT 7440-44-0, Carbon, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(activated, desiccant; organic field-effect electroluminescent device having polyurethane adhesive sealing layer)

IT 9002-89-5, Poly(vinyl alcohol) 10043-52-4, Calcium chloride, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(desiccants; organic field-effect electroluminescent device having polyurethane adhesive sealing layer)

IT 101408-07-5P 102279-24-3P 129021-55-2P

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(organic field-effect electroluminescent device having polyurethane adhesive sealing layer)

L7 ANSWER 102 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1997:443355 HCAPLUS

DN 127:78217

TI Detection of biological molecules using chemical amplification and optical sensors

IN Van Antwerp, William Peter; Mastrototaro, John Joseph

PA Minimed, Inc., USA; Van Antwerp, William Peter; Mastrototaro, John Joseph

SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 11

|      | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---|------|----------|-----------------|--------------|
| PI   | WO 9719188  | A1   | 19970529 | WO 1996-US18720 | 19961121 <-- |
|      | W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG |      |          |                 |              |
|      | CA 2235738  | A1   | 19970529 | CA 1996-2235738 | 19961121 <-- |
|      | CA 2235738  | C    | 19970529 |                 |              |
|      | AU 9710582  | A    | 19970611 | AU 1997-10582   | 19961121 <-- |
|      | EP 862648   | A1   | 19980909 | EP 1996-941438  | 19961121 <-- |
|      | EP 862648   | B1   | 20041006 |                 |              |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI   |      |          |                 |              |
|      | JP 2000500656   | T    | 20000125 | JP 1997-519906  | 19961121 <-- |
|      | AT 278801   | T    | 20041015 | AT 1996-941438  | 19961121 <-- |
|      | US 6319540  | B1   | 20011120 | US 1999-401147  | 19990922 <-- |
|      | US 2002043651   | A1   | 20020418 | US 2001-826745  | 20010404 <-- |
| PRAI | US 1995-7515P   | P    | 19951122 |                 |              |
|      | US 1995-410775  | A    | 19950327 |                 |              |

|                 |    |          |
|-----------------|----|----------|
| US 1996-749366  | A  | 19961121 |
| US 1996-752945  | A3 | 19961121 |
| WO 1996-US18720 | W  | 19961121 |
| US 1999-154103P | P  | 19990915 |
| US 1999-78392   | A  | 19991121 |
| US 1999-461627  | A  | 19991214 |
| US 2000-194571P | P  | 20000404 |
| US 2000-663567  | A  | 20000915 |

AB Methods are provided for the determination of the concentration of biol. levels of

polyhydroxylated compds., particularly glucose. The methods utilize an amplification system that is an analyte transducer immobilized in a polymeric matrix, where the system is implantable and biocompatible. Upon interrogation by an optical system, the amplification system produces a signal capable of detection external to the skin of the patient. Quantitation of the analyte of interest is achieved by measurement of the emitted signal.

PI WO 9719188 A1 19970529

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |            |    |          |                 |              |
|----|------------|----|----------|-----------------|--------------|
| PI | WO 9719188 | A1 | 19970529 | WO 1996-US18720 | 19961121 <-- |
|----|------------|----|----------|-----------------|--------------|

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN  
 RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

|            |    |          |                 |              |
|------------|----|----------|-----------------|--------------|
| CA 2235738 | A1 | 19970529 | CA 1996-2235738 | 19961121 <-- |
|------------|----|----------|-----------------|--------------|

|            |   |          |  |  |
|------------|---|----------|--|--|
| CA 2235738 | C | 19970529 |  |  |
|------------|---|----------|--|--|

|            |   |          |               |              |
|------------|---|----------|---------------|--------------|
| AU 9710582 | A | 19970611 | AU 1997-10582 | 19961121 <-- |
|------------|---|----------|---------------|--------------|

|           |    |          |                |              |
|-----------|----|----------|----------------|--------------|
| EP 862648 | A1 | 19980909 | EP 1996-941438 | 19961121 <-- |
|-----------|----|----------|----------------|--------------|

|           |    |          |  |  |
|-----------|----|----------|--|--|
| EP 862648 | B1 | 20041006 |  |  |
|-----------|----|----------|--|--|

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

|               |   |          |                |              |
|---------------|---|----------|----------------|--------------|
| JP 2000500656 | T | 20000125 | JP 1997-519906 | 19961121 <-- |
|---------------|---|----------|----------------|--------------|

|           |   |          |                |              |
|-----------|---|----------|----------------|--------------|
| AT 278801 | T | 20041015 | AT 1996-941438 | 19961121 <-- |
|-----------|---|----------|----------------|--------------|

|            |    |          |                |              |
|------------|----|----------|----------------|--------------|
| US 6319540 | B1 | 20011120 | US 1999-401147 | 19990922 <-- |
|------------|----|----------|----------------|--------------|

|               |    |          |                |              |
|---------------|----|----------|----------------|--------------|
| US 2002043651 | A1 | 20020418 | US 2001-826745 | 20010404 <-- |
|---------------|----|----------|----------------|--------------|

IT Diabetes mellitus

Electroluminescent devices

Fluorescence quenching

Fluorometry

Hydrogels

Immobilization, biochemical

Optical fibers

Optical sensors

Semiconductor lasers

(polyhydroxy compds. determination using chemical amplification and optical sensors)

IT 122829-85-0P 123033-34-1P 183383-99-5P 183384-05-6P

183384-09-0P 191417-64-8P 191417-65-9P 191417-66-0P

191417-67-1P 191616-57-6P 191616-58-7P 191616-59-8P 191616-60-1P

191616-61-2DP, substituted anthracene derivs

RL: ARU (Analytical role, unclassified); DEV (Device component use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(polyhydroxy compds. determination using chemical amplification and optical sensors)

L7 ANSWER 103 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1997:339192 HCAPLUS

DN 126:344111

TI Synthesis and characterization of fluorescent side-chain polymers  
 AU Lee, Seung Ju; Kim, Dong Wook; Park, Soo Young; Hong, Sung Il  
 CS Department of Fiber and Polymer Science, Seoul National University, Seoul,  
 151-742, S. Korea  
 SO Korea Polymer Journal (1997), 5(1), 52-56  
 CODEN: KPJOE2  
 PB Polymer Society of Korea  
 DT Journal  
 LA English  
 AB Two methacrylate monomers containing highly fluorescent phenylene vinylene and  
 carbazolylene vinylene moieties were synthesized. Fluorescent side-chain  
 polymers with potential electroluminescent device application  
 were obtained by copolymn. of these monomers with Me methacrylate (MMA) or  
 9-vinylcarbazole (NVK) using a free radical initiator. Since the polymers  
 were very soluble in common organic solvents, polymeric films could be  
 prepared by  
 spin coating or casting. The mol. weight of the polymers was as high as  
 40,000 g/mol and the glass transition temperature varied from 120° to  
 above 200°, depending on the chemical structure of the polymers. The  
 phenylene vinylene-based polymers showed greenish-blue emission (around  
 485 nm) and the carbazolylene vinylene-based polymers blue emission  
 (around 445 nm).

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Korea Polymer Journal (1997), 5(1), 52-56  
 CODEN: KPJOE2

AB Two methacrylate monomers containing highly fluorescent phenylene vinylene and  
 carbazolylene vinylene moieties were synthesized. Fluorescent side-chain  
 polymers with potential electroluminescent device application  
 were obtained by copolymn. of these monomers with Me methacrylate (MMA) or  
 9-vinylcarbazole (NVK) using a free radical initiator. Since the polymers  
 were very soluble in common organic solvents, polymeric films could be  
 prepared by  
 spin coating or casting. The mol. weight of the polymers was as high as  
 40,000 g/mol and the glass transition temperature varied from 120° to  
 above 200°, depending on the chemical structure of the polymers. The  
 phenylene vinylene-based polymers showed greenish-blue emission (around  
 485 nm) and the carbazolylene vinylene-based polymers blue emission  
 (around 445 nm).

IT 189949-55-1P 189949-56-2P 189949-57-3P 189949-58-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or  
 engineered material use); PREP (Preparation); USES (Uses)  
 (preparation and characterization of fluorescent side-chain polymers)

L7 ANSWER 104 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1997:249813 HCAPLUS  
 DN 126:306090

TI Improved photoluminescence efficiency of films from conjugated polymers  
 AU Andersson, M. R.; Berggren, M.; Olinga, T.; Hjertberg, T.; Inganaes, O.;  
 Wennerstroem, O.  
 CS Department of Organic Chemistry, Chalmers University of Technology,  
 Goteborg, 41296, Swed.  
 SO Synthetic Metals (1997), 85(1-3), 1383-1384  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 PB Elsevier  
 DT Journal  
 LA English  
 AB Two general ways to increase the photoluminescence efficiency of films  
 from conjugated polymers were demonstrated. One is to disperse the  
 conjugated polymer on a mol. level by using attractive forces between the  
 conjugated polymer and the matrix. The other method is to substitute the  
 conjugated polymer with side chains which separates the conjugated  
 backbones. Using this idea a new poly(thiophene) with a photoluminescence

efficiency of 16% in films has been prepared LEDs (light-emitting diodes) from this polymer exhibit an external efficiency of 0.1% for single layer and 0.7% for double layer diodes.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

SO Synthetic Metals (1997), 85(1-3), 1383-1384  
CODEN: SYMEDZ; ISSN: 0379-6779

IT Electroluminescent devices  
Luminescence  
(improved photoluminescence efficiency of films from polythiophene-based conjugated polymers)

IT 189283-28-1  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(poly(acrylic acid) blend; improved photoluminescence efficiency of films from polythiophene-based conjugated polymers)

L7 ANSWER 105 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1997:224313 HCAPLUS

DN 126:310250

TI Polythiophene with urethane substitute for light emitting devices

AU Jung, Sang-Don; Zyung, Taehyoung; Kim, Woohong; Chittibabu, K. G.; Tripathy, S. K.

CS Electronics Telecommunications Res. Inst., Taejon, 305-600, S. Korea

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1997), 38(1), 425-426  
CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

AB A single-layer LED using an Ar pump laser comprises an electroluminescent phosphor consisting of poly[2-(3-thienyl)ethanol n-butoxy carbonylmethyl urethane] (PURET) emitting an orange red light.

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1997), 38(1), 425-426  
CODEN: ACPPAY; ISSN: 0032-3934

AB A single-layer LED using an Ar pump laser comprises an electroluminescent phosphor consisting of poly[2-(3-thienyl)ethanol n-butoxy carbonylmethyl urethane] (PURET) emitting an orange red light.

IT 182691-54-9  
RL: DEV (Device component use); USES (Uses)  
(polythiophene with urethane substitute for LED)

L7 ANSWER 106 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1997:204353 HCAPLUS

DN 126:218336

TI Electroluminescent device with polymeric charge injection layer

IN Kolb, Eric S.; Mehta, Parag G.

PA Polaroid Corp., USA

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|------|--|------|----------|-----------------|--------------|
| PI   | US 5609970   | A    | 19970311 | US 1995-371848  | 19950112 <-- |
|      | CA 2207630   | A1   | 19960718 | CA 1996-2207630 | 19960116 <-- |
|      | JP 10512392  | T    | 19981124 | JP 1996-521871  | 19960116 <-- |
| PRAI | US 1995-371848   | A    | 19950112 |                 |              |
|      | WO 1996-US584  | W    | 19960116 |                 |              |
| AB   | Electroluminescent devices comprising first and second |      |          |                 |              |

electrodes, a layer of an electroluminescent polymer disposed between the electrodes, and a hole injection layer disposed between the first electrode and the layer of electroluminescent polymer are described in which the hole injection layer is formed from a polymer having a main chain and a plurality of sidechains each attached at one of its ends to the main chain, at least some of the sidechains containing an electron-donating substituent so that the oxidation potential of the polymer is less pos. than about +1.6 V (preferably the range of about +0.4 to about +0.8 V). Preferred electron-donating groups are di- and triphenylamino groups. The generation of light using the devices is also described. Polymethylene, poly(alkylmethylene), polyether, poly(alk)acrylate, polyurethane, polyimide, polyamide, polyurea, polyester, polyether ketone, poly(N-acylimine) or polysiloxane chain.

TI Electroluminescent device with polymeric charge injection layer

PI US 5609970 A 19970311

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-------------|------|----------|-----------------|--------------|
| PI | US 5609970  | A    | 19970311 | US 1995-371848  | 19950112 <-- |
|    | CA 2207630  | A1   | 19960718 | CA 1996-2207630 | 19960116 <-- |
|    | JP 10512392 | T    | 19981124 | JP 1996-521871  | 19960116 <-- |

AB Electroluminescent devices comprising first and second electrodes, a layer of an electroluminescent polymer disposed between the electrodes, and a hole injection layer disposed between the first electrode and the layer of electroluminescent polymer are described in which the hole injection layer is formed from a polymer having a main chain and a plurality of sidechains each attached at one of its ends to the main chain, at least some of the sidechains containing an electron-donating substituent so that the oxidation potential of the polymer is less pos. than about +1.6 V (preferably the range of about +0.4 to about +0.8 V). Preferred electron-donating groups are di- and triphenylamino groups. The generation of light using the devices is also described. Polymethylene, poly(alkylmethylene), polyether, poly(alk)acrylate, polyurethane, polyimide, polyamide, polyurea, polyester, polyether ketone, poly(N-acylimine) or polysiloxane chain.

ST electroluminescent device polymeric hole injection layer

IT Electroluminescent devices  
(electroluminescent devices with polymeric hole injection layers)

IT Polyamides, uses  
Polyesters, uses  
Polyethers, uses  
Polyimides, uses  
Polysiloxanes, uses  
Polyureas  
Polyurethanes, uses  
RL: DEV (Device component use); USES (Uses)  
(electroluminescent devices with polymeric hole injection layers)

IT Polyketones  
Polyketones  
RL: DEV (Device component use); USES (Uses)  
(polyether-; electroluminescent devices with polymeric hole injection layers)

IT Polyethers, uses  
Polyethers, uses  
RL: DEV (Device component use); USES (Uses)  
(polyketone-; electroluminescent devices with polymeric hole injection layers)

IT 25038-57-7D, Polymethylene, derivs. 173865-99-1  
188047-45-2

RL: DEV (Device component use); USES (Uses)  
(electroluminescent devices with polymeric hole injection layers)

L7 ANSWER 107 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1997:151470 HCAPLUS  
 DN 126:178762  
 TI Multicolor electroluminescence elements and manufacture thereof  
 IN Ooishi, Masao  
 PA Nippon Paint Co Ltd, Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 09007768    | A    | 19970110 | JP 1995-148738  | 19950615 <-- |
| PRAI | JP 1995-148738 |      | 19950615 |                 |              |

AB The manufacturing process comprises the steps of: forming an ITO stripe array on  
 a glass substrate; and coating the (1 + 3m)th, the (2 + 3m)th, and the (3 + 3m)th stripe (m = integers) in the 1st, the 2nd and the 3rd electrodeposition solution containing a red, a green, and a blue dye-containing resin, resp.

TI Multicolor electroluminescence elements and manufacture thereof  
 PI JP 09007768 A 19970110 Heisei

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|----|-------------|------|----------|-----------------|--------------|
| PI | JP 09007768 | A    | 19970110 | JP 1995-148738  | 19950615 <-- |

ST electroluminescence display tricolor stripe electrodeposition coating  
 IT Electrodeposition  
 Luminescence, electroluminescence  
 Optical imaging devices  
 (manufacture of multicolor electroluminescence display elements)  
 IT Polysiloxanes, uses  
 RL: DEV (Device component use); USES (Uses)  
 (manufacture of multicolor electroluminescence display elements)  
 IT Polyketones  
 Polyketones  
 RL: DEV (Device component use); USES (Uses)  
 (polyether-; manufacture of multicolor electroluminescence display elements)  
 IT Polyethers, uses  
 Polyethers, uses  
 RL: DEV (Device component use); USES (Uses)  
 (polyketone-; manufacture of multicolor electroluminescence display elements)  
 IT 25038-59-9, Polyethylene terephthalate, uses 37271-44-6 38215-36-0,  
 Coumarin 6 51325-91-8, DCMI 141257-17-2 186830-27-3  
 RL: DEV (Device component use); USES (Uses)  
 (manufacture of multicolor electroluminescence display elements)

L7 ANSWER 108 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1996:707967 HCAPLUS  
 DN 125:329775  
 TI Vinyl polymers and copolymers, their preparation and use in electroluminescent devices  
 IN Chen, Yun; Koehler, Burkhard; Wehrmann, Rolf; Elschner, Andreas; Dujardin, Ralf  
 PA Bayer A.-G., Germany  
 SO Eur. Pat. Appl., 34 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA German

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|--|------|----------|------------------|--------------|
| PI   | EP 735055  | A2   | 19961002 | EP 1996-104204   | 19960316 <-- |
|      | EP 735055  | A3   | 19991117 |                  |              |
|      | R: AT, BE, CH, DE, FR, GB, IT, LI, NL  |      |          |                  |              |
|      | DE 19511484  | A1   | 19961002 | DE 1995-19511484 | 19950329 <-- |
|      | TW 397858  | B    | 20000711 | TW 1996-85102711 | 19960306 <-- |
|      | JP 08269138  | A    | 19961015 | JP 1996-91820    | 19960322 <-- |
|      | CA 2172705   | A1   | 19960930 | CA 1996-2172705  | 19960326 <-- |
|      | CN 1140725   | A    | 19970122 | CN 1996-104291   | 19960329 <-- |
| PRAI | DE 1995-19511484   | A    | 19950329 |                  |              |
| AB   | The polymers comprise 0.5-100% repeating units CH <sub>2</sub> CR <sub>1</sub> C <sub>6</sub> H <sub>3</sub> R <sub>4</sub> AlNHCO <sub>2</sub> L <sub>1</sub> and/or CH <sub>2</sub> CR <sub>2</sub> COA <sub>2</sub> NHCO <sub>2</sub> L <sub>2</sub> and 0-99.5% units CH <sub>2</sub> CR <sub>3</sub> X [A <sub>1</sub> , A <sub>2</sub> = (hetero atom- or arylene-interrupted) C <sub>1</sub> -30 alkylene, C <sub>6</sub> -18 arylene; L <sub>1</sub> , L <sub>2</sub> = photoluminescent group; R <sub>1</sub> -R <sub>3</sub> = H, C <sub>1</sub> -6 alkyl; R <sub>4</sub> = H, C <sub>1</sub> -30 alkyl, C <sub>1</sub> -30 alkoxy, C <sub>6</sub> -18 aryl; X = CN, COR <sub>5</sub> , (un)substituted Ph, naphthyl, anthracenyl, pyridinyl, or carbazolyl; R <sub>5</sub> = (un)substituted C <sub>1</sub> -30 alkyl, C <sub>1</sub> -30 alkoxy, or mono- or di(C <sub>1</sub> -30-alkyl)amino]. Thus, 49.3 mmol N-vinylcarbazole was copolymd. with 2.49 mmol m-(2-isocyanato-2-propyl)- $\alpha$ -methylstyrene in toluene with AIBN as initiator, and the resulting polymer was treated with N-(4-butylphenyl)-4-[(2-hydroxyethyl)methylamino]naphthalimide to give a yellow copolymer with a green fluorescence. This copolymer was spin-coated to 170-nm thickness on cleansed ITO-coated glass, and Al electrodes were vapor-deposited to give an electroluminescent device in which the electroluminescence was independent of the polarity of the applied voltage. |      |          |                  |              |
| TI   | Vinyl polymers and copolymers, their preparation and use in electroluminescent devices   |      |          |                  |              |
| PI   | EP 735055 A2   |      | 19961002 |                  |              |
|      | PATENT NO.   | KIND | DATE     | APPLICATION NO.  | DATE         |
| PI   | EP 735055  | A2   | 19961002 | EP 1996-104204   | 19960316 <-- |
|      | EP 735055  | A3   | 19991117 |                  |              |
|      | R: AT, BE, CH, DE, FR, GB, IT, LI, NL  |      |          |                  |              |
|      | DE 19511484  | A1   | 19961002 | DE 1995-19511484 | 19950329 <-- |
|      | TW 397858  | B    | 20000711 | TW 1996-85102711 | 19960306 <-- |
|      | JP 08269138  | A    | 19961015 | JP 1996-91820    | 19960322 <-- |
|      | CA 2172705   | A1   | 19960930 | CA 1996-2172705  | 19960326 <-- |
|      | CN 1140725   | A    | 19970122 | CN 1996-104291   | 19960329 <-- |
| AB   | The polymers comprise 0.5-100% repeating units CH <sub>2</sub> CR <sub>1</sub> C <sub>6</sub> H <sub>3</sub> R <sub>4</sub> AlNHCO <sub>2</sub> L <sub>1</sub> and/or CH <sub>2</sub> CR <sub>2</sub> COA <sub>2</sub> NHCO <sub>2</sub> L <sub>2</sub> and 0-99.5% units CH <sub>2</sub> CR <sub>3</sub> X [A <sub>1</sub> , A <sub>2</sub> = (hetero atom- or arylene-interrupted) C <sub>1</sub> -30 alkylene, C <sub>6</sub> -18 arylene; L <sub>1</sub> , L <sub>2</sub> = photoluminescent group; R <sub>1</sub> -R <sub>3</sub> = H, C <sub>1</sub> -6 alkyl; R <sub>4</sub> = H, C <sub>1</sub> -30 alkyl, C <sub>1</sub> -30 alkoxy, C <sub>6</sub> -18 aryl; X = CN, COR <sub>5</sub> , (un)substituted Ph, naphthyl, anthracenyl, pyridinyl, or carbazolyl; R <sub>5</sub> = (un)substituted C <sub>1</sub> -30 alkyl, C <sub>1</sub> -30 alkoxy, or mono- or di(C <sub>1</sub> -30-alkyl)amino]. Thus, 49.3 mmol N-vinylcarbazole was copolymd. with 2.49 mmol m-(2-isocyanato-2-propyl)- $\alpha$ -methylstyrene in toluene with AIBN as initiator, and the resulting polymer was treated with N-(4-butylphenyl)-4-[(2-hydroxyethyl)methylamino]naphthalimide to give a yellow copolymer with a green fluorescence. This copolymer was spin-coated to 170-nm thickness on cleansed ITO-coated glass, and Al electrodes were vapor-deposited to give an electroluminescent device in which the electroluminescence was independent of the polarity of the applied voltage. |      |          |                  |              |
| ST   | electroluminescent vinyl copolymer   |      |          |                  |              |
| IT   | Electroluminescent devices<br>(preparation of vinyl polymers for use in electroluminescent devices)  |      |          |                  |              |
| IT   | 120439-94-3DP, reaction products with naphthalimide derivative<br>178551-21-8DP, reaction products with polymeric isocyanates  |      |          |                  |              |

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(preparation of vinyl polymers for use in electroluminescent devices)

IT 95861-88-4P 120439-94-3P 123165-67-3P 178551-20-7P,  
N-(4-Butylphenyl)-4-chloronaphthalimide 178551-21-8P,  
N-(4-Butylphenyl)-4-[(2-hydroxyethyl)methylamino]naphthalimide  
181474-94-2P 181474-95-3P 183208-96-0P 183209-01-0P,  
2-Isocyanatoethyl methacrylate-N-vinylcarbazole copolymer 183291-61-4P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation of vinyl polymers for use in electroluminescent devices)

IT 95861-88-4DP, reaction products with coumarin derivative 181474-95-3DP,  
reaction products with polymeric isocyanates 183208-96-0DP, reaction  
products with coumarin derivative 183209-00-9DP, reaction products with  
polymeric isocyanates 183209-01-0DP, reaction products with  
naphthoylenebenzimidazoles 183291-61-4DP, reaction products with  
polymeric isocyanates

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation of vinyl polymers for use in electroluminescent devices)

IT 95-54-5, o-Phenylenediamine, reactions 104-13-2, 4-Butylaniline  
105-53-3, Diethyl malonate 109-83-1, 2-(Methylamino)ethanol 4053-08-1,  
4-Chloronaphthalic anhydride 17754-90-4, 4-(Diethylamino)salicylaldehyde  
183208-99-3, Bis(6-hydroxyhexyl) malonate  
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of vinyl polymers for use in electroluminescent devices)

L7 ANSWER 109 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1996:680741 HCAPLUS

DN 126:60703

TI Side-chain electroluminescent polymers

AU Bouche, C.-M.; Berdague, P.; Facoetti, H.; Robin, P.; Le Barny, P.; Schott, M.

CS Laboratoire de Chimie pour l'Electronique, Laboratoire Central de Recherches, THOMSON-CSF, Orsay, 91404, Fr.

SO Synthetic Metals (1996), 81(2-3, 2nd Japan-France Joint Forum (JFJF'2) on Organic Materials and Optoelectronic Devices, 1995), 191-195  
CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier

DT Journal

LA English

AB A novel type of electroluminescent material, side-chain polymer, is investigated to eliminate problems linked to the use of small emitting mols. or conjugated polymers. Blue, green and orange diodes have been made. A hole-transporting layer increases the light emission of the green diode. Doping of side-chain polymers produces orange light.

TI Side-chain electroluminescent polymers

SO Synthetic Metals (1996), 81(2-3, 2nd Japan-France Joint Forum (JFJF'2) on Organic Materials and Optoelectronic Devices, 1995), 191-195  
CODEN: SYMEDZ; ISSN: 0379-6779

AB A novel type of electroluminescent material, side-chain polymer, is investigated to eliminate problems linked to the use of small emitting mols. or conjugated polymers. Blue, green and orange diodes have been made. A hole-transporting layer increases the light emission of the green diode. Doping of side-chain polymers produces orange light.

ST electroluminescent polymer side chain; blue green orange diode

electroluminescent polymer

IT Electroluminescent devices

Electron affinity



Ionization potential  
 Luminescence, electroluminescence  
 (side-chain electroluminescent polymers)

IT 51325-91-8, DCM (dye)  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (dopant; in side-chain electroluminescent polymers)  
 IT 184353-10-4 184353-12-6 184353-15-9D, esters  
 RL: PRP (Properties)  
 (photoluminescence of anthracenes as potential side groups of  
 electroluminescent polymers)  
 IT 184352-98-5 184353-03-5 184353-07-9  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (side-chain electroluminescent polymers)

L7 ANSWER 110 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1996:609839 HCAPLUS  
 DN 125:248827  
 TI Electroluminescent polymers from vinyl compounds and their use  
 IN Chen, Yun; Wehrmann, Rolf; Elschner, Andreas; Dujardin, Ralf  
 PA Bayer A.-G., Germany  
 SO Ger. Offen., 28 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

|      | PATENT NO.                            | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|---------------------------------------|------|----------|------------------|--------------|
| PI   | DE 19505942                           | A1   | 19960822 | DE 1995-19505942 | 19950221 <-- |
|      | EP 728775                             | A2   | 19960828 | EP 1996-101800   | 19960208 <-- |
|      | EP 728775                             | A3   | 19980401 |                  |              |
|      | EP 728775                             | B1   | 20011004 |                  |              |
|      | R: AT, BE, CH, DE, FR, GB, IT, LI, NL |      |          |                  |              |
|      | AT 206439                             | T    | 20011015 | AT 1996-101800   | 19960208 <-- |
|      | TW 384305                             | B    | 20000311 | TW 1996-85101605 | 19960209 <-- |
|      | US 6248457                            | B1   | 20010619 | US 1996-599581   | 19960209 <-- |
|      | CA 2169711                            | A1   | 19960822 | CA 1996-2169711  | 19960216 <-- |
|      | JP 08245726                           | A    | 19960924 | JP 1996-53955    | 19960216 <-- |
|      | CN 1142510                            | A    | 19970212 | CN 1996-103456   | 19960216 <-- |
|      | US 2001026879                         | A1   | 20011004 | US 2001-850843   | 20010508 <-- |
|      | US 6403239                            | B2   | 20020611 |                  |              |
| PRAI | DE 1995-19505942                      | A    | 19950221 |                  |              |
|      | US 1996-599581                        | A1   | 19960209 |                  |              |

AB The title polymers, e.g., Bu acrylate-7-diethylamino-3-(6-methacryloyloxyhexoxycarbonyl)coumarin copolymer, (m/p)-methylstyrene-N-[(m/p)-vinylbenzyl]phenothiazine copolymer, and homopolymer of N-isoamyl-4-[N-methyl-N-[2-[(m/p)-vinylbenzyloxy]ethyl]amino]-1,8-naphthalimide, are prepared and used in electroluminescent devices.

TI Electroluminescent polymers from vinyl compounds and their use  
 PI DE 19505942 A1 19960822

|    | PATENT NO.                            | KIND | DATE     | APPLICATION NO.  | DATE         |
|----|---------------------------------------|------|----------|------------------|--------------|
| PI | DE 19505942                           | A1   | 19960822 | DE 1995-19505942 | 19950221 <-- |
|    | EP 728775                             | A2   | 19960828 | EP 1996-101800   | 19960208 <-- |
|    | EP 728775                             | A3   | 19980401 |                  |              |
|    | EP 728775                             | B1   | 20011004 |                  |              |
|    | R: AT, BE, CH, DE, FR, GB, IT, LI, NL |      |          |                  |              |
|    | AT 206439                             | T    | 20011015 | AT 1996-101800   | 19960208 <-- |
|    | TW 384305                             | B    | 20000311 | TW 1996-85101605 | 19960209 <-- |
|    | US 6248457                            | B1   | 20010619 | US 1996-599581   | 19960209 <-- |
|    | CA 2169711                            | A1   | 19960822 | CA 1996-2169711  | 19960216 <-- |
|    | JP 08245726                           | A    | 19960924 | JP 1996-53955    | 19960216 <-- |
|    | CN 1142510                            | A    | 19970212 | CN 1996-103456   | 19960216 <-- |

US 2001026879 A1 20011004 US 2001-850843 20010508 <--  
US 6403239 B2 20020611

AB The title polymers, e.g., Bu acrylate-7-diethylamino-3-(6-methacryloyloxyhexoxycarbonyl)coumarin copolymer, (m/p)-methylstyrene-N-[(m/p)-vinylbenzyl]phenothiazine copolymer, and homopolymer of N-isoamyl-4-[N-methyl-N-[2-[(m/p)-vinylbenzyloxy]ethyl]amino]-1,8-naphthalimide, are prepared and used in electroluminescent devices.

ST coumarin deriv methacrylate polymer electroluminescence; phenothiazine deriv styrene polymer electroluminescence; naphthalimide deriv styrene polymer electroluminescence; electroluminescence polymer methacrylate styrene deriv; phosphor polymer methacrylate styrene deriv; polymn methacrylate styrene deriv electroluminescence

IT Polymerization  
(of vinyl group-containing monomers to form electroluminescent polymers)

IT Electroluminescent devices  
(preparation and uses of polymers of vinyl group-containing monomers for)

IT Phosphors  
(electroluminescent, preparation and uses of polymers of vinyl group-containing monomers as)

IT 181474-97-5P, Butyl acrylate-7-diethylamino-3-(6-methacryloyloxyhexoxycarbonyl)coumarin copolymer 181657-66-9P, N-Isoamyl-4-[N-methyl-N-[2-(vinylbenzyloxy)ethyl]amino]-1,8-naphthalimide polymer 181945-00-6P 182024-35-7P, N-(Vinylbenzyl)phenothiazine-vinyltoluene copolymer 182024-37-9P 182209-22-9P  
RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation and uses of electroluminescent)

L7 ANSWER 111 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1996:425278 HCAPLUS

DN 125:72061

TI Electroluminescent diode with crosslinked polymer and electroluminescent graft polymer

IN Berdague, Philippe; Le Barny, Pierre

PA Thomson-Csfc, Fr.

SO Eur. Pat. Appl., 14 pp.

CODEN: EPXXDW

DT Patent

LA French

FAN.CNT 1

|      | PATENT NO.        | KIND | DATE     | APPLICATION NO. | DATE         |
|------|-------------------|------|----------|-----------------|--------------|
| PI   | EP 712171         | A1   | 19960515 | EP 1995-402483  | 19951107 <-- |
|      | R: DE, GB, IT, NL |      |          |                 |              |
|      | FR 2726692        | A1   | 19960510 | FR 1994-13377   | 19941108 <-- |
|      | FR 2726692        | B1   | 19970124 |                 |              |
|      | FI 9505350        | A    | 19960509 | FI 1995-5350    | 19951107 <-- |
| PRAI | FR 1994-13377     | A    | 19941108 |                 |              |

AB The invention concerns an electroluminescent diode comprising a layer based on crosslinked polymer in which are dissolved or on which are grafted electroluminescent groups. It equally comprises a layer capable of assuring electron transport. The invention equally concerns novel lateral chain copolymers comprising crosslinkable groups and electroluminescent groups. Application to displays is indicated.

TI Electroluminescent diode with crosslinked polymer and electroluminescent graft polymer

PI EP 712171 A1 19960515

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

|    |  |    |          |                |              |
|----|--|----|----------|----------------|--------------|
| PI | EP 712171  | A1 | 19960515 | EP 1995-402483 | 19951107 <-- |
|    | R: DE, GB, IT, NL  |    |          |                |              |
|    | FR 2726692   | A1 | 19960510 | FR 1994-13377  | 19941108 <-- |
|    | FR 2726692   | B1 | 19970124 |                |              |
|    | FI 9505350   | A  | 19960509 | FI 1995-5350   | 19951107 <-- |
| AB | The invention concerns an electroluminescent diode comprising a layer based on crosslinked polymer in which are dissolved or on which are grafted electroluminescent groups. It equally comprises a layer capable of assuring electron transport. The invention equally concerns novel lateral chain copolymers comprising crosslinkable groups and electroluminescent groups. Application to displays is indicated. |    |          |                |              |
| ST | electroluminescent diode crosslinked polymer display; graft polymer electroluminescent diode; light emitting diode crosslinked polymer display; LED crosslinked polymer display  |    |          |                |              |
| IT | Electroluminescent devices<br>(electroluminescent diode with crosslinked polymer and electroluminescent graft polymer)   |    |          |                |              |
| IT | Epoxy resins, uses<br>RL: DEV (Device component use); USES (Uses)<br>(amino-containing, electroluminescent diode with crosslinked polymer and electroluminescent graft polymer)  |    |          |                |              |
| IT | 65503-34-6P 178551-23-0P 178551-24-1P<br>RL: DEV (Device component use); IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)<br>(electroluminescent diode with crosslinked polymer and electroluminescent graft polymer)  |    |          |                |              |
| IT | 178551-20-7P 178551-21-8P 178551-22-9P<br>RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)<br>(electroluminescent diode with crosslinked polymer and electroluminescent graft polymer)  |    |          |                |              |
| IT | 104-13-2, 4-Butylaniline 109-83-1 109-89-7, reactions 121-44-8, reactions 920-46-7, Methacryloyl chloride 4053-08-1, 4-Chloro-1,8-naphthalic anhydride<br>RL: RCT (Reactant); RACT (Reactant or reagent)<br>(electroluminescent diode with crosslinked polymer and electroluminescent graft polymer)   |    |          |                |              |

L7 ANSWER 112 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1996:237546 HCAPLUS  
DN 124:262017  
TI Manufacture of N-vinylcarbazole-based film-forming polymers for use in electroluminescent devices  
IN Uchida, Manabu; Izumisawa, Jusho; Furukawa, Kenji  
PA Chisso Corp, Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

|      |   |      |          |                 |              |
|------|---|------|----------|-----------------|--------------|
|      | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
| PI   | JP 08020614   | A    | 19960123 | JP 1994-179632  | 19940707 <-- |
| PRAI | JP 1994-179632  |      | 19940707 |                 |              |
| AB   | The title polymers also contain phenoxazone derivs. bearing (meth)acryloxy groups or/and styryl derivs. bearing (meth)acryloxy groups, and have N-vinylcarbazole content 50-99.99 mol% and mol. weight of 5000-1,000,000. Thus, heating N-vinylcarbazole with I in the presence of AIBN gave a title polymer. |      |          |                 |              |
| TI   | Manufacture of N-vinylcarbazole-based film-forming polymers for use in electroluminescent devices   |      |          |                 |              |
| PI   | JP 08020614 A 19960123 Heisei   |      |          |                 |              |

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|----|---|------|----------|-----------------|--------------|
| PI | JP 08020614   | A    | 19960123 | JP 1994-179632  | 19940707 <-- |
| ST | vinylcarbazole polymer electroluminescent device; acrylic vinylcarbazole polymer electroluminescent device  |      |          |                 |              |
| IT | Electroluminescent devices  |      |          |                 |              |
|    | (manufacture and use of vinylcarbazole polymers in)   |      |          |                 |              |
| IT | 175465-46-0P 175465-48-2P 175465-50-6P  |      |          |                 |              |
|    | RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)   |      |          |                 |              |
|    | (manufacture and use of vinylcarbazole polymers in electroluminescent devices)  |      |          |                 |              |
| L7 | ANSWER 113 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN   |      |          |                 |              |
| AN | 1996:136099 HCAPLUS   |      |          |                 |              |
| DN | 124:178244  |      |          |                 |              |
| TI | A New Polymeric Triarylamine and Its Use as a Charge Transport Layer for Polymeric LEDs   |      |          |                 |              |
| AU | Kolb, Eric S.; Gaudiana, Russell A.; Mehta, Parag G.  |      |          |                 |              |
| CS | Materials Research Laboratory, Polaroid Corporation, Cambridge, MA, 02139, USA  |      |          |                 |              |
| SO | Macromolecules (1996), 29(7), 2359-64   |      |          |                 |              |
|    | CODEN: MAMOBX; ISSN: 0024-9297  |      |          |                 |              |
| PB | American Chemical Society   |      |          |                 |              |
| DT | Journal   |      |          |                 |              |
| LA | English   |      |          |                 |              |
| AB | A new hole-injecting polymer for an electroluminescent element was prepared by radical polymerization of a methacrylate monomer that contains   |      |          |                 |              |
| an | N'-biphenyl-N,N-diphenylamine unit as a pendent side chain. Cyclic voltammetry of the polymer coated on an ITO electrode shows a chemical irreversible oxidation at 1.2 V. Subsequent cycles reveal that the newly formed species is electrochem. stable. The polymer was used as both an electroluminescent layer and a hole injection layer in single- and double-layered devices, resp. The double-layered device using ITO as the anode, Al as the cathode, and poly[methyl(2-(1-pyrenyl)ethyl)siloxane] as the electroluminescent layer gave bright blue-green light with a maximum brightness level of 168 cd/m <sup>2</sup> and an internal quantum efficiency of 0.20%. |      |          |                 |              |
| SO | Macromolecules (1996), 29(7), 2359-64   |      |          |                 |              |
|    | CODEN: MAMOBX; ISSN: 0024-9297  |      |          |                 |              |
| AB | A new hole-injecting polymer for an electroluminescent element was prepared by radical polymerization of a methacrylate monomer that contains   |      |          |                 |              |
| an | N'-biphenyl-N,N-diphenylamine unit as a pendent side chain. Cyclic voltammetry of the polymer coated on an ITO electrode shows a chemical irreversible oxidation at 1.2 V. Subsequent cycles reveal that the newly formed species is electrochem. stable. The polymer was used as both an electroluminescent layer and a hole injection layer in single- and double-layered devices, resp. The double-layered device using ITO as the anode, Al as the cathode, and poly[methyl(2-(1-pyrenyl)ethyl)siloxane] as the electroluminescent layer gave bright blue-green light with a maximum brightness level of 168 cd/m <sup>2</sup> and an internal quantum efficiency of 0.20%. |      |          |                 |              |
| IT | Electroluminescent devices  |      |          |                 |              |
|    | Hole  |      |          |                 |              |
|    | (polymeric triarylamine and for hole injection in charge transport layer for polymeric LEDs)  |      |          |                 |              |
| IT | 9004-73-3DP, Poly(methylhydrosiloxane), reaction product with 1-vinylpyrene 17088-21-0DP, 1-Vinylpyrene, reaction product with Me siloxane 49718-23-2DP, Poly(methylhydrosiloxane), monomer-based, reaction product with 1-vinylpyrene 173865-99-1P   |      |          |                 |              |
|    | RL: SPN (Synthetic preparation); TEM (Technical or engineered material  |      |          |                 |              |

use); PREP (Preparation); USES (Uses)  
 (polymeric triarylamine and for hole injection in charge transport  
 layer for polymeric LEDs)

L7 ANSWER 114 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1995:746595 HCAPLUS  
 DN 123:156140

TI Solid electroluminescent device containing polymer electrolyte  
 and its manufacture

IN Takeuchi, Masataka; Yashima, Hideo

PA Showa Denko Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 07152050    | A    | 19950616 | JP 1993-323194  | 19931129 <-- |
|      | JP 3464513     | B2   | 20031110 |                 |              |
| PRAI | JP 1993-323194 |      | 19931129 |                 |              |

AB The device contains a polymer solid electrolyte obtained from an  
 electrolyte and a solid solvent of CH<sub>2</sub>:C(R<sub>1</sub>)CO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>NHCO<sub>2</sub>(R<sub>2</sub>)nR<sub>3</sub> [I; R<sub>1</sub>  
 = H, Me; R<sub>2</sub> = (CH<sub>2</sub>)<sub>2</sub>, CHMeCH<sub>2</sub>; R<sub>3</sub> = C<sub>1</sub>-10 alkyl, CONH(CH<sub>2</sub>)<sub>2</sub>OCOC(R<sub>1</sub>):CH<sub>2</sub>; n  
 ≥ 1] homopolymers, their copolymers, or their mixts. as ion  
 conductive substances between electrodes. The device is manufactured by  
 setting a polymerizable monomer solution containing an electrolyte, I, and  
 optionally a plasticizer in the device and polymerizing The device showed good  
 repeating durability and rapid response.

TI Solid electroluminescent device containing polymer electrolyte  
 and its manufacture

|    | PATENT NO.    | KIND | DATE            | APPLICATION NO. | DATE         |
|----|---------------|------|-----------------|-----------------|--------------|
| PI | JP 07152050 A |      | 19950616 Heisei |                 |              |
| PI | JP 07152050   | A    | 19950616        | JP 1993-323194  | 19931129 <-- |
|    | JP 3464513    | B2   | 20031110        |                 |              |

ST electroluminescent device solid polymer electrolyte;  
 acryloyloxyethyl carbamate polymer solvent electroluminescent  
 device

IT Electroluminescent devices  
 Plasticizers

(solid electroluminescent device containing  
 (meth)acryloylethylcarbamate polymer solvent with good repeating  
 durability)

IT 14283-07-9, Lithium tetrafluoroborate

RL: DEV (Device component use); USES (Uses)

(electrolyte; solid electroluminescent device containing  
 (meth)acryloylethylcarbamate polymer solvent with good repeating  
 durability)

IT 118889-33-1P 133756-69-1P

RL: PNU (Preparation, unclassified); PREP (Preparation)

(oligomeric; solid electroluminescent device containing  
 (meth)acryloylethylcarbamate polymer solvent with good repeating  
 durability)

IT 9004-74-4, Polyethylene glycol Monomethyl ether 25322-68-3, Polyethylene  
 glycol

RL: RCT (Reactant); RACT (Reactant or reagent)

(oligomeric; solid electroluminescent device containing  
 (meth)acryloylethylcarbamate polymer solvent with good repeating  
 durability)

IT 161518-46-3P

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP  
 (Preparation); USES (Uses)

(solid electroluminescent device containing  
(meth)acryloylethylcarbamate polymer solvent with good repeating  
durability)  
IT 13641-96-8 30674-80-7, 2-Methacryloyloxyethyl isocyanate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(solid electroluminescent device containing  
(meth)acryloylethylcarbamate polymer solvent with good repeating  
durability)

L7 ANSWER 115 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1995:657559 HCAPLUS  
DN 123:69907  
TI Electroluminescent diodes utilizing blends of polymers  
IN Heeger, Alan; Zhang, Chi; Schmidt, Hand-Werner; Von, Seggern Heinke  
PA University of California, USA  
SO PCT Int. Appl., 55 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

|      | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|------|--|------|----------|-----------------|--------------|
| PI   | WO 9501871   | A1   | 19950119 | WO 1994-US7649  | 19940707 <-- |
|      | W: AU, CA, JP, KR, NO  |      |          |                 |              |
|      | RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                 |              |
|      | AU 9472565   | A    | 19950206 | AU 1994-72565   | 19940707 <-- |
| PRAI | US 1993-89976  | A    | 19930709 |                 |              |
|      | WO 1994-US7649   | W    | 19940707 |                 |              |

AB Light-emitting polymer compns. are described which comprise a  
hole-transporting polymer and a polymeric conjugated organic emitter having  
≥2 mer units. The blends of luminescent polymer in a matrix of  
hole transporting polymer serve as active layers in LEDs. The use of  
polymer blends reduces the amount of costly luminescent polymer employed,  
leads to higher efficiencies and causes wavelength shifts in the emitted  
light as compared to homopolymer-based active layers. Methods for forming  
the blends and methods for using them in LEDs are also disclosed.

TI Electroluminescent diodes utilizing blends of polymers

|    | PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE         |
|----|--|------|----------|-----------------|--------------|
| PI | WO 9501871   | A1   | 19950119 | WO 1994-US7649  | 19940707 <-- |
|    | W: AU, CA, JP, KR, NO  |      |          |                 |              |
|    | RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE |      |          |                 |              |
|    | AU 9472565   | A    | 19950206 | AU 1994-72565   | 19940707 <-- |

ST polymer blend electroluminescent diode

IT Electroluminescent devices

(electroluminescent diodes utilizing polymer blends)

IT Poly(arylenealkenylenes)

RL: DEV (Device component use); USES (Uses)

(electroluminescent diodes utilizing polymer blends)

IT Poly(arylenealkenylenes)

RL: DEV (Device component use); USES (Uses)

(polyphenylenevinylenes, electroluminescent diodes utilizing  
polymer blends)

IT 25067-59-8, Poly(9-vinylcarbazole) 25190-54-9, Poly(2,5-  
dimethoxyphenylene vinylene) 26009-24-5, Poly(p-phenylene vinylene)  
75660-54-7 76830-09-6 76830-16-5 84110-21-4 84117-59-9  
87186-99-0, Poly(9H-carbazole-3,6-diyl) 117501-02-7,  
Poly(p-phenylphenylene vinylene) 138184-36-8 164516-24-9 164516-25-0  
RL: DEV (Device component use); USES (Uses)

(electroluminescent diodes utilizing polymer blends)

IT 25853-15-0P, Poly(1,2-diphenyl-1,2-ethenediyl) 29252-20-8P,  
2,5-Bis(bromomethyl)biphenyl homopolymer

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(electroluminescent diodes utilizing polymer blends)

IT 138184-36-8P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(electroluminescent diodes utilizing polymer blends)

IT 46498-85-5P 146370-51-6P 146370-52-7P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(electroluminescent diodes utilizing polymer blends)

IT 150-76-5, 4-Methoxyphenol 7372-85-2, 2,5-Dimethylbiphenyl 18908-66-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(electroluminescent diodes utilizing polymer blends)

L7 ANSWER 116 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1995:602424 HCAPLUS

DN 123:170508

TI Electroluminescent polymers containing pendant electroluminescent side chains, and electroluminescent devices containing them

IN Cumming, William J.; Gaudiana, Russell A.; Ingwall, Richard T.; Kolb, Eric S.; Mehta, Parag G.; Minns, Richard A.

PA Polaroid Corp., USA

SO U.S., 13 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | US 5414069    | A    | 19950509 | US 1993-12038   | 19930201 <-- |
| PRAI | US 1993-12038 |      | 19930201 |                 |              |

AB An electroluminescent polymer consists of a main chain with at least 2 pendant electroluminescent side chains and a flexible spacer connecting the side chain with the main chain, such that the electroluminescent groups are not conjugated with each other. The main chain can be a polyether, polyurethane, polyimide, polyamide, polyurea, polyester, polyether ether ketone, poly(N-acylimine) or polysiloxane. Electroluminescent groups are chosen from anthracenyl, naphthacenyl, pentacenyl, fluoranthrenyl, tetrahydrochrysenyl, pyrenyl, carbazolyl, perylenyl, 1H-benzimidazo[2,1-a]benz[de]isoquinolinyl, or 4-(2'-phenyl)vinylphenyl groups.

TI Electroluminescent polymers containing pendant electroluminescent side chains, and electroluminescent devices containing them

PI US 5414069 A 19950509

|    | PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE         |
|----|------------|------|----------|-----------------|--------------|
| PI | US 5414069 | A    | 19950509 | US 1993-12038   | 19930201 <-- |

AB An electroluminescent polymer consists of a main chain with at least 2 pendant electroluminescent side chains and a flexible spacer connecting the side chain with the main chain, such that the electroluminescent groups are not conjugated with each other. The main chain can be a polyether, polyurethane, polyimide, polyamide, polyurea, polyester, polyether ether ketone, poly(N-acylimine) or polysiloxane. Electroluminescent groups are chosen from anthracenyl, naphthacenyl, pentacenyl, fluoranthrenyl, tetrahydrochrysenyl, pyrenyl, carbazolyl, perylenyl, 1H-benzimidazo[2,1-a]benz[de]isoquinolinyl, or 4-(2'-phenyl)vinylphenyl groups.

ST electroluminescent polymer device; siloxane electroluminescent polymer device; polymethacrylate electroluminescent polymer

IT Siloxanes and Silicones, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (anthracenylethyl Me; polymers containing pendant electroluminescent side chains, and electroluminescent devices containing them)

IT Electroluminescent devices  
 (electroluminescent devices containing polymers containing pendant electroluminescent side chains)

IT Siloxanes and Silicones, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (pyrenylethyl Me; polymers containing pendant electroluminescent side chains, and electroluminescent devices containing them)

IT Siloxanes and Silicones, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (carbazolylpropyl Me, polymers containing pendant electroluminescent side chains, and electroluminescent devices containing them)

IT Coating materials  
 (electroluminescent, polymers containing pendant electroluminescent side chains, and electroluminescent devices containing them)

IT 150528-92-0P 159802-34-3P 167859-79-2P 167859-80-5P  
 167859-81-6P 167859-83-8P 167859-85-0P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (polymers containing pendant electroluminescent side chains, and electroluminescent devices containing them)

L7 ANSWER 117 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1995:283807 HCAPLUS

DN 122:42231

TI Excimer Emission and Wavelength Control from Light-Emitting Diodes Based on Side-Chain Polymers

AU Bisberg, J.; Cumming, W. J.; Gaudiana, R. A.; Hutchinson, K. D.; Ingwall, R. T.; Kolb, E. S.; Mehta, P. G.; Minns, R. A.; Petersen, C. P.

CS Materials Research Laboratory, Polaroid Corporation, Cambridge, MA, 02139, USA

SO Macromolecules (1995), 28(1), 386-9

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB A unique approach to generating electroluminescent polymers exhibiting well-defined emission involves the functionalization of fluorophores with olefin, alc. or amine groups followed by polymerization of

the

monomer or substitution on an already formed polymer. In all examples, the polymers have a flexible backbone and the fluorophore is connected to the backbone by a pendant, flexible spacer. Homo- and co-polymers were synthesized in good yields and high mol. wts. were obtained. The addition of functionalized chromophores to the backbone of a preformed polymer was also readily accomplished. The polymers are soluble in a variety of solvents primarily determined by the nature of the backbone, and they form nonscattering films when spin cast from solution. When these materials were incorporated into diodes, the position and breadth of the electroluminescent emission band is in most cases very similar to the photoluminescent emission band of the corresponding non-polymerized fluorophore in solution and

in

the polymer film. In examples in which pyrene is used as the pendant fluorophore, electroluminescent emission originates from pyrene



excimers. In all copolymers comprising 2 lumophores, the 1st excited singlet of the lower energy species is the source of light emission.

SO Macromolecules (1995), 28(1), 386-9  
CODEN: MAMOBX; ISSN: 0024-9297

AB A unique approach to generating electroluminescent polymers exhibiting well-defined emission involves the functionalization of fluorophores with olefin, alc. or amine groups followed by polymerization of the monomer or substitution on an already formed polymer. In all examples, the polymers have a flexible backbone and the fluorophore is connected to the backbone by a pendant, flexible spacer. Homo- and co-polymers were synthesized in good yields and high mol. wts. were obtained. The addition of functionalized chromophores to the backbone of a preformed polymer was also readily accomplished. The polymers are soluble in a variety of solvents primarily determined by the nature of the backbone, and they form nonscattering films when spin cast from solution. When these materials were incorporated into diodes, the position and breadth of the electroluminescent emission band is in most cases very similar to the photoluminescent emission band of the corresponding non-polymerized fluorophore in solution and in the polymer film. In examples in which pyrene is used as the pendant fluorophore, electroluminescent emission originates from pyrene excimers. In all copolymers comprising 2 lumophores, the 1st excited singlet of the lower energy species is the source of light emission.

IT Electroluminescent devices  
Luminescent substances  
(excimer emission and wavelength control from light-emitting diodes based on side-chain polymers)

IT Polymers, properties  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(methacrylate and siloxane electroluminescent; excimer emission and wavelength control from light-emitting diodes based on side-chain polymers)

IT 159802-34-3P 159802-36-5P 159802-37-6P 159802-41-2P  
167859-85-0P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(excimer emission and wavelength control from light-emitting diodes based on side-chain polymers)

L7 ANSWER 118 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1995:184127 HCAPLUS  
DN 122:20138  
TI Diglycidyl ether monocynoethylated glycerin and its-containing binder resin composition for organic dispersion-type electroluminescent device

IN Nishikawa, Takashi; Okamoto, Hiroshi; Ono, Mihoko; Yano, Katsumi; Futakuchi, Tomoaki; Takabayashi, Sotohiro; Terasawa, Takashi  
PA Sunstar Engineering Inc, Japan; Toyama Prefecture  
SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---------------|------|----------|-----------------|--------------|
| PI   | JP 06228523   | A    | 19940816 | JP 1993-18494   | 19930205 <-- |
|      | JP 3286369    | B2   | 20020527 |                 |              |
| PRAI | JP 1993-18494 |      | 19930205 |                 |              |

AB The glycerin derivative I is claimed. The composition contains I, triethylenetetramine or a modified aromatic amine as curing agent, and optionally tricyanoethylated pentaerythritol as a highly dielec. material.

The composition showed high dielec. constant and transparency.

TI Diglycidyl ether monocyanoethylated glycerin and its-containing binder resin composition for organic dispersion-type electroluminescent device

PI JP 06228523 A 19940816 Heisei

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|-------------|------|----------|-----------------|--------------|
| JP 06228523 | A    | 19940816 | JP 1993-18494   | 19930205 <-- |
| JP 3286369  | B2   | 20020527 |                 |              |

ST cyanoethylated epoxy resin binder electroluminescent

IT Electric insulators and Dielectrics  
Electroluminescent devices  
(cyanoethylated epoxy resin binder with high dielec. constant for electroluminescent device)

IT Epoxy resins, uses  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(cyanoethylated; cyanoethylated epoxy resin binder with high dielec. constant for electroluminescent device)

IT 159335-66-7P 159736-79-5P 159736-81-9P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(cyanoethylated epoxy resin binder with high dielec. constant for electroluminescent device)

IT 159335-65-6P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(cyanoethylated epoxy resin binder with high dielec. constant for electroluminescent device)

IT 107-13-1, 2-Propenenitrile, reactions 27043-36-3, Glycerin  
1,3-diglycidyl ether  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyanoethylated epoxy resin binder with high dielec. constant for electroluminescent device)

L7 ANSWER 119 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1989:486974 HCAPLUS

DN 111:86974

TI Electrochemical continuous emission of ruthenium(bpy)<sub>3</sub>+2 in polymer matrix

AU Igarashi, Ryuji; Nosaka, Yoshio; Fujii, Nobuyuki; Miyama, Hajime; Yokoyama, Meiso

CS Dep. Chem., Nagaoka Univ. Technol., Nagaoka, 940-21, Japan

SO Denki Kagaku oyobi Kogyo Butsuri Kagaku (1989), 57(4), 302-6  
CODEN: DKOKAZ; ISSN: 0366-9297

DT Journal

LA English

AB An electrochemiluminescence cell consisted of an Al (or Pt) cathode, a Nafion-Ru(bpy)<sub>3</sub>+2 layer containing a polymer electrolyte (AQ-Nylon T70, from Toray Ind.) and LiCl [these layers were impregnated with a 50:30:20 (volume) propylene carbonate-water-N,N-dimethylacetamide mixture], and an In-Sn oxide electrode on glass substrate. This cell emitted 610-nm light by application of square wave voltage, similarly as by photoexcitation of Ru(bpy)<sub>3</sub>+2 at 450 nm. No emission was observed when In-Sn oxide was used instead of Al (or Pt) electrode, or when water was absent. Maximum luminescence intensity was observed when the frequency of the square wave was 0.4 Hz. The mechanisms were discussed.

SO Denki Kagaku oyobi Kogyo Butsuri Kagaku (1989), 57(4), 302-6  
CODEN: DKOKAZ; ISSN: 0366-9297

IT Electroluminescent devices  
(chemi-, with various components)

IT 108-32-7, Propylene carbonate 127-19-5, N,N-Dimethylacetamide  
122157-01-1, AQ-Nylon T 70  
RL: PRP (Properties)

(electrochemiluminescence cell containing)

L7 ANSWER 120 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1988:611674 HCAPLUS  
DN 109:211674  
TI Grafted fluoropolymers with decreased emission of corrosive  
low-molecular-weight substances  
IN Murakami, Tomoyuki  
PA Nitto Electric Industrial Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE         |
|------|----------------|------|----------|-----------------|--------------|
| PI   | JP 63072732    | A    | 19880402 | JP 1986-218476  | 19860916 <-- |
| PRAI | JP 1986-218476 |      | 19860916 |                 |              |

AB Fluoropolymers useful for protective linings of rubber stoppers, waterproofing films for electroluminescent devices, etc., which do not give off acidic low-mol.-weight degradation products formed during high-temperature processing, contain  $\leq 3\%$  acid-binding grafting monomers (e.g., unsatd. amines, amides, epoxides). Thus, poly(chlorotrifluoroethylene) (I) was melt extruded through a T-die to form a 200- $\mu$ m film, which was irradiated with an electron beam and immersed in a 20% solution of 2-(diethylamino)ethyl methacrylate (II) in toluene at 70° for 60 min to obtain a film containing 0.12% copolymd. II, which when immersed in H<sub>2</sub>O at 90° for 24 h showed almost no extraction of acidic substances, vs. 5.5 + 10<sup>-6</sup> mol/g extractable acids in the ungrafted I film.

|    |               |          |          |                 |              |
|----|---------------|----------|----------|-----------------|--------------|
| PI | JP 63072732 A | 19880402 | Showa    |                 |              |
|    | PATENT NO.    | KIND     | DATE     | APPLICATION NO. | DATE         |
| PI | JP 63072732   | A        | 19880402 | JP 1986-218476  | 19860916 <-- |

AB Fluoropolymers useful for protective linings of rubber stoppers, waterproofing films for electroluminescent devices, etc., which do not give off acidic low-mol.-weight degradation products formed during high-temperature processing, contain  $\leq 3\%$  acid-binding grafting monomers (e.g., unsatd. amines, amides, epoxides). Thus, poly(chlorotrifluoroethylene) (I) was melt extruded through a T-die to form a 200- $\mu$ m film, which was irradiated with an electron beam and immersed in a 20% solution of 2-(diethylamino)ethyl methacrylate (II) in toluene at 70° for 60 min to obtain a film containing 0.12% copolymd. II, which when immersed in H<sub>2</sub>O at 90° for 24 h showed almost no extraction of acidic substances, vs. 5.5 + 10<sup>-6</sup> mol/g extractable acids in the ungrafted I film.

IT 117651-12-4P 117651-15-7P 117651-16-8P 117651-17-9P  
RL: PREP (Preparation)  
(preparation of, with reduced emission of acidic degradation products)

L7 ANSWER 121 OF 121 HCAPLUS COPYRIGHT 2008 ACS on STN  
AN 1968:439722 HCAPLUS  
DN 69:39722  
OREF 69:7443a,7446a  
TI Chemically plated transparent conductive metal films on glass  
IN Roth, Harold H.  
PA Dow Chemical Co.  
SO U.S., 3 pp.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 1

|  | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------------|------|------|-----------------|------|
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|------|----------------|---|----------|----------------|--------------|
| PI   | US 3372059     | A | 19680305 | US 1967-632910 | 19670424 <-- |
| PRAI | US 1967-632910 | A | 19670424 |                |              |

AB Such thin films of Ag, Cu, or Ni having consistently 3-200 or more ohms/in. elec. resistance and 5-55% transparency as determined by calorimeter, are deposited by 1-30 min. immersion in conventional chemical plating solns., containing metal salts with conventional hydrazine, hypophosphite, or HCHO reducing agents, such as are used for depositing mirrors on sensitized glass, if the plating rate is retarded to a readily controlled value by adding 0.04-1% by weight water-soluble polymeric acrylamide resin to the solution

A list of suitable compds. includes homopolymers of acrylamide wherein 10-50% of the carboxamide groups are hydrolyzed; copolymers of acrylamide with up to 20 mole % methacrylate, vinyl, styrene, etc. groups; and those with up to 50 mole % acrylic acid and its soluble salts. They must have high mol. weight, and provide at least 4 cp. viscosity when 0.5% by weight is dissolved in a 4% NaCl solution at pH 5-6 and 25°. When sufficient high-mol.-weight copolymer of 80% acrylamide and 20% 2-aminoethyl methacrylate hydrochloride was added as a Na salt, to a silvering solution mixture of 40 ml. aqueous solution containing 130 ml./l. 40% formaldehyde, plus 100 ml.

aqueous solution containing 60 g./l. AgNO3 and 100 g./l. NH4OH, to provide 0.06%

copolymer by weight, and glass slides activated in SnCl2 solution were immersed in it for various periods, a film having 54% transparency and too high resistance to measure was formed in 2 min.; in 5 min. the film had 32% transparency and 800 ohms/in. resistance; and in 15 min. it had 9% transparency and 75 ohms/in. resistance. Other expts. are described in detail in which 3 other polymers, identified only by trade names, were used. In 1 comparison 0.04% acrylonitrile-butadiene-styrene polymer gave in 30 min. immersion in a coppering solution a film weighing 0.353 g. and having 2 ohms/in. resistance on a glass slide of the same size as 1 on which, without the polymer, an invisible film weighing 0.928 g. and having 1.2 ohms/in. resistance was obtained in 5 min. with the same solution otherwise. Such Cu films on glass are useful bases for decorative Cr plate. Plastic electrodes coated in this way with transparent Ag are useful for flexible electroluminescent lamps.

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IT 29255-01-4

RL: USES (Uses)

(deposition of metal films from aqueous solns. containing)

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| COST IN U.S. DOLLARS                       | SINCE FILE ENTRY | TOTAL SESSION |
| FULL ESTIMATED COST                        | 403.74           | 585.52        |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
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L1 STRUCTURE UPLOADED  
 L2 SCREEN 2067  
 L3 50 S L1 AND L2 SSS SAM  
 L4 84966 S L1 AND L2 SSS FUL

FILE 'HCAPLUS' ENTERED AT 17:13:19 ON 11 FEB 2008

L5 66684 S L4  
 L6 149 S L5 AND ELECTROLUMINESCEN?

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L7 121 S L6 AND PY<2006

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| COST IN U.S. DOLLARS                       | SINCE FILE ENTRY | TOTAL SESSION |
| FULL ESTIMATED COST                        | 0.06             | 585.58        |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
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